STEREO GRAPHIC EQUALIZER

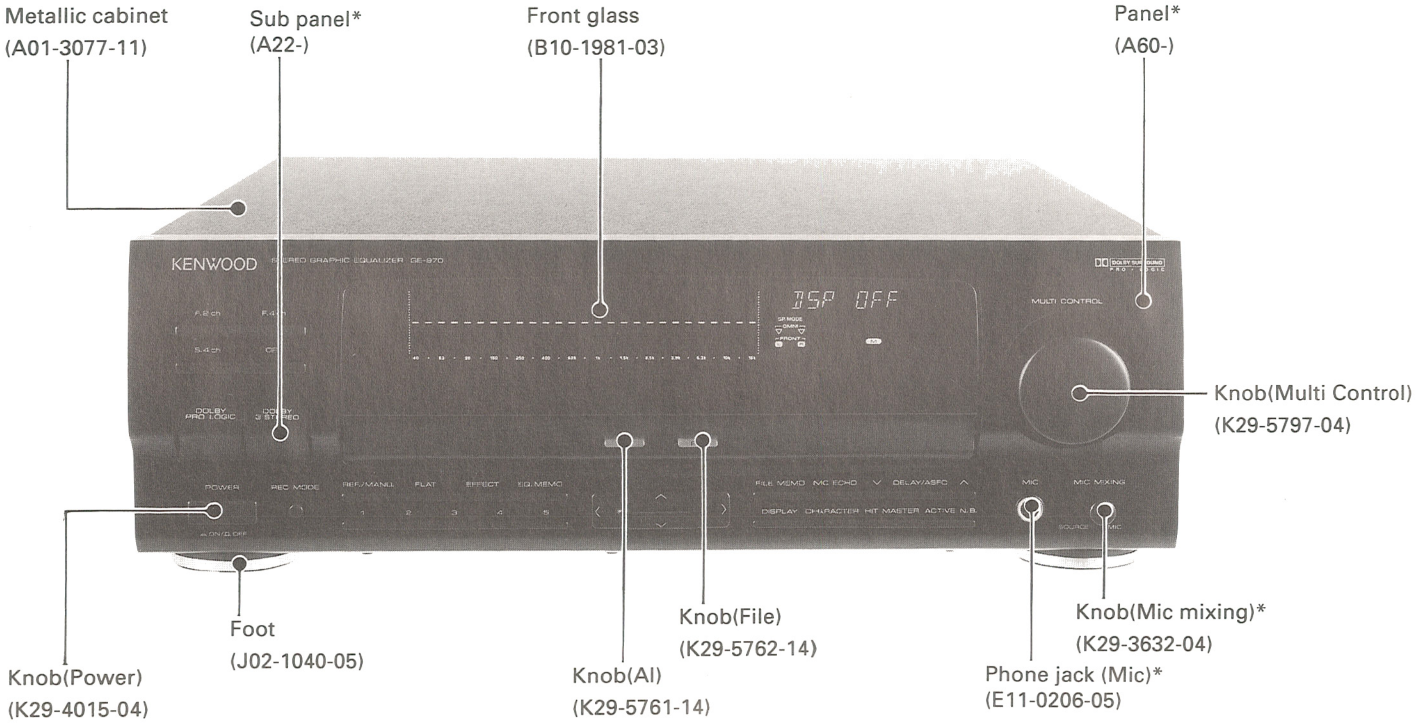
GE-970

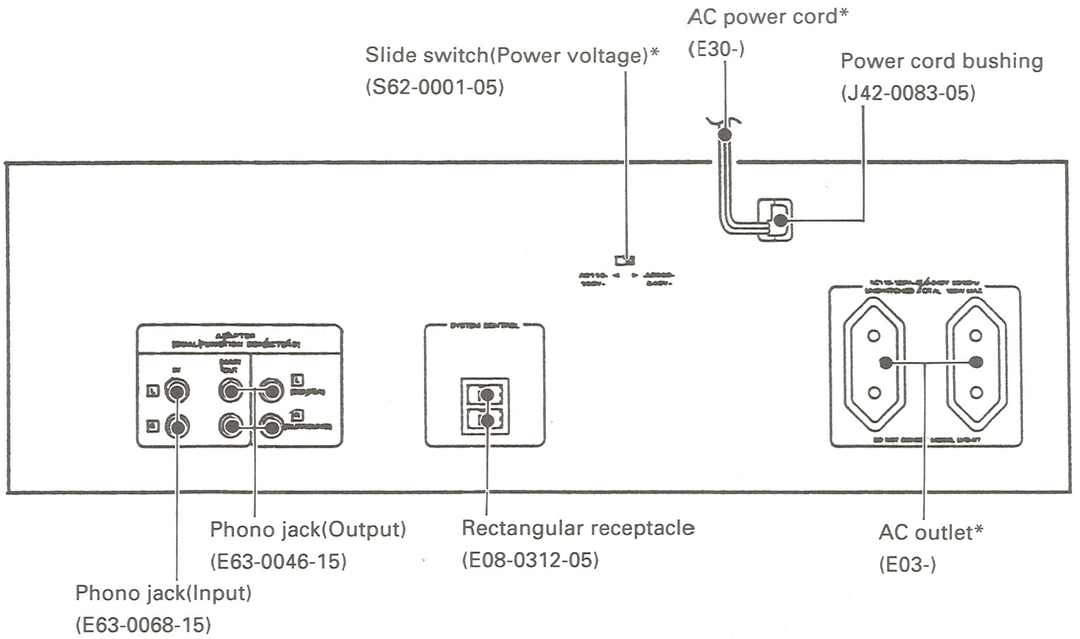
SERVICE MANUAL

KENWOOD

©1993-6 PRINTED IN JAPAN

B51-4802-00(J)2443


Metallic cabinet
(A01-3077-11)
Sub panel*
(A22-)
Front glass
(B10-1981-03)
Panel*
(A60-)
KENWOOD
DSP OFF
MULTI CONTROL
Knob(Multi Control)
(K29-5797-04)
Knob(Power)
(K29-4015-04)
Foot
(J02-1040-05)
Knob(AI)
(K29-5761-14)
Knob(File)
(K29-5762-14)
Knob(Mic mixing)*
(K29-3632-04)
Phone jack (Mic)*
(E11-0206-05)


Slide switch(Power voltage)*
(S62-0001-05)
AC power cord*
(E30-)
Power cord bushing
(J42-0083-05)
Phono jack(Output)
(E63-0046-15)
Phono jack(Input)
(E63-0068-15)
Rectangular receptacle
(E08-0312-05)
AC outlet*
(E03-)

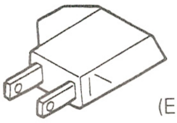
***Refer to parts list on page22.**

CONTENTS/ACCESSORIES

ACCESSORIES 2
BLOCK DIAGRAM 3
CIRCUIT DESCRIPTION 4
PC BOARD 9
SCHEMATIC DIAGRAM 13
EXPLODED VIEW 21
PARTS LIST 22
SPECIFICATIONS 27

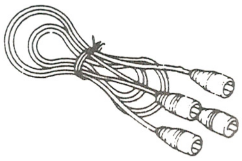
Accessories

AC plug adaptor 1
(Except for some areas)
For the unit with a European AC
plug in areas other than Europe.



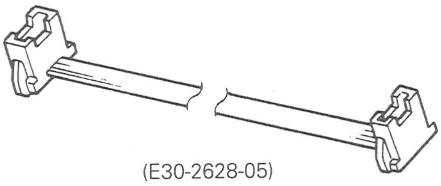
(E03-0115-05)

Audio cord 3



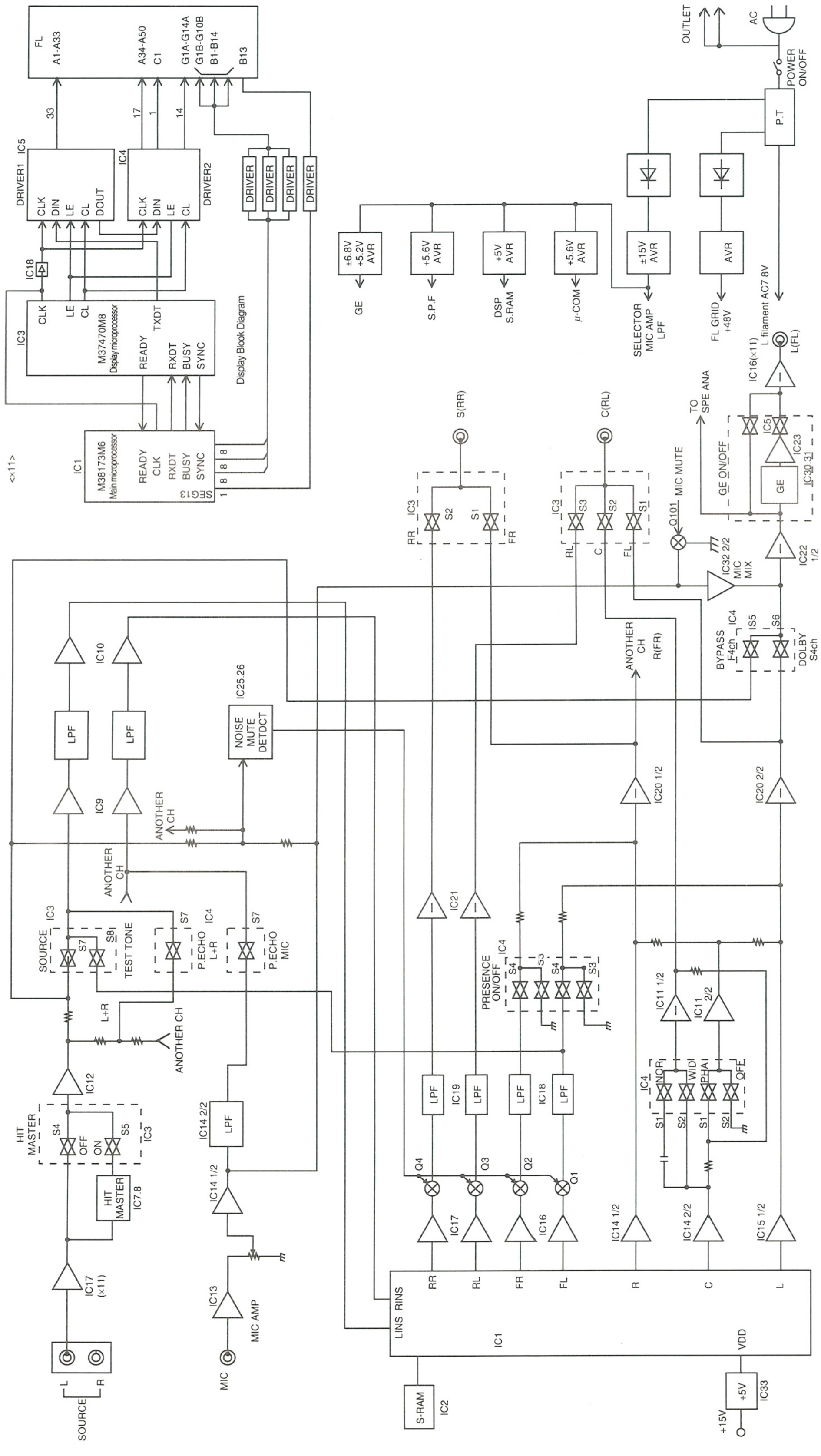
(E30-0615-05)

System control cord 1



(E30-2628-05)

BLOCK DIAGRAM


FL
A1-A33
A34-A50
C1
G1A-G14A
G1B-G10B
B1-B14
B13
33
17
1
14
DRIVER1
IC5
IC4
DRIVER2
CLK
DIN
LE
CL
DOUT
DRIVER
IC18
IC3
M37470M8
Display microprocessor
READY
TXDT
RXDT
BUSY
SYNC
Display Block Diagram
IC1
M38173M6
Main microprocessor
SEG13
<<11>
OUTLET
AC
POWER ON/OFF
P.T
±6.8V +5.2V AVR
+5.6V AVR
+5V AVR
±15V AVR
AVR
GE
S.P.F
DSP S.RAM
μ-COM
SELECTOR MIC AMP LPF
FL GRID +48V
L filament AC7.8V
S(RR)
C(RL)
L(FL)
IC16(×11)
TO SPE ANA
IC5
IC23
GE ON/OFF
IC30 31
MIC MUTE
Q101
IC32 2/2 MIC MIX
IC22 1/2
RR
FR
RL
C
FL
S1
S2
S3
BYPASS F4ch
DOLBY S4ch
S5
S6
ANOTHER CH R(FR)
IC10
LPF
IC25,26
NOISE MUTE DETDCT
IC9
ANOTHER CH
IC20 1/2
IC20 2/2
IC21
SOURCE
TEST TONE
S7
S8
P.ECHO L+R
P.ECHO MIC
PRESENCE ON/OFF
S4
IC11 1/2
IC11 2/2
NOR
WIDE
PHA
QFE
L+R
IC12
HIT MASTER
OFF
ON
IC7,8
IC14 2/2
IC14 1/2
IC19
IC18
Q1
Q2
Q3
Q4
IC17
IC16
IC14 1/2
IC14 2/2
IC15 1/2
IC17 (×11)
IC13
MIC AMP
MIC
SOURCE
L
R
LINS RINS
IC1
VDD
S-RAM
IC2
+5V
IC33
+15V

CIRCUIT DESCRIPTION

1. Test mode using keys on the main unit

(1) Setting method

·Hold down the FLAT key and insert the power plug into an outlet.

(2) Canceling method

·The test mode is canceled by removing the power plug from the outlet, and the unit returns to the initial settings.

(3) Description

① All FLs and LEDs ON

·When the power plug is inserted into an outlet while the FLAT key is held down, all FLs and LEDs turn on. The normal display returns when any key on the main unit is pressed.

② Confirmation of validity of the keys on the main unit

·Validity of the keys on the main unit can be confirmed.

③ Keys that have different functions from their normal functions in the test mode

·DISPLAY key

Change the FL bar display mode.

The FL bar display mode is changed in cycles as follows.

→EQ display→Spectrum analyzer (normal display mode) reverse display→Niagara display→

·M1 key

EQ level ALL FLAT

Set the EQ level of all bands to 0 dB.

·M2 key

EQ level ALL MAX

Set the EQ level of all bands to MAXIMUM.

·M3 key

EQ level ALL MIN

Set the EQ level of all bands to MINIMUM.

·M4 key

TEST TONE ON/OFF

Set the test tone on or off in DOLBY SURROUND/DOLBY 3-STEREO MODE only.

·M5 key

All fluorescent displays off

Turn all fluorescent displays other than SP. MODE off.

·PRESENCE JAZZ CLUB

DSP THROUGH MODE

Output DSP THROUGH MODE data to the DSP.

·ASFC/DELAY UP KEY

3-step setting

Three steps change from MINIMUM to CENTER to MAXIMUM.

·ASFC/DELAY DOWN KEY

3-step setting

Three steps change from MAXIMUM to CENTER to MINIMUM.

·FILE MEMO KEY

EEPROM WRITE-READ CHECK

Write test data into and read from the EEPROM. If the written data matches the read data, _ROM_OK_ is displayed on the 14-segment display. Otherwise, _ROM_NG_ is displayed on the 14-segment display.

2. Initial setting

(1) Setting method

·Hold down the MEMORY key and insert the power plug into an outlet.

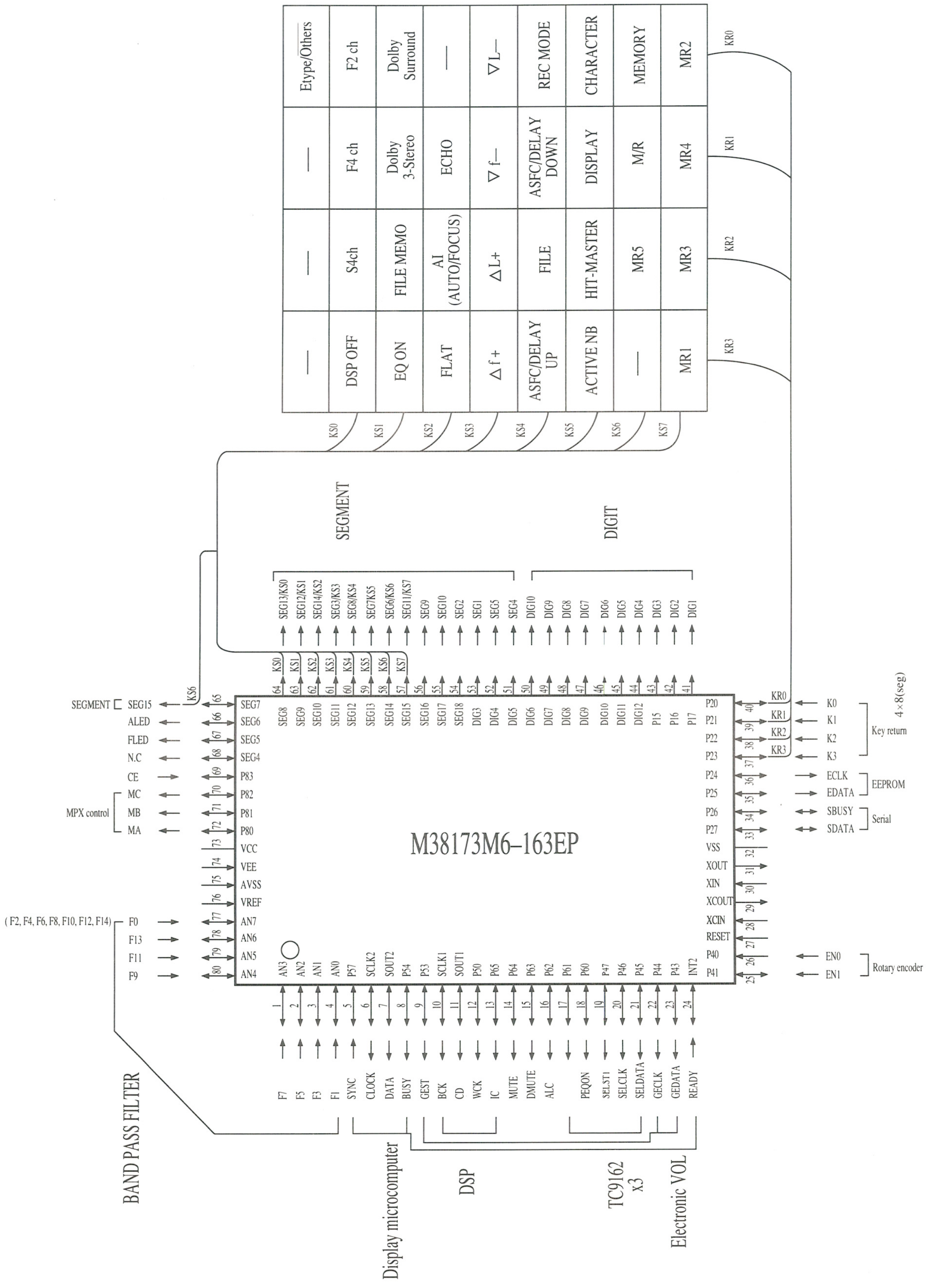
·Remove the power plug from an outlet or insert it into an outlet in test mode using keys on the main unit or by serial communication.

(2) Description

·All functions, including the test mode, are initialized.

CIRCUIT DESCRIPTION

X11-342 IC1 Key Matrix



		KS0	KS1	KS2	KS3	KS4	KS5	KS6	KS7
KR0	Etype/Others	F2 ch	Dolby Surround	—	∇L—	REC MODE	CHARACTER	MEMORY	MR2
KR1	—	F4 ch	Dolby 3-Stereo	ECHO	∇f—	ASFC/DELAY DOWN	DISPLAY	M/R	MR4
KR2	—	S4ch	FILE MEMO	AI (AUTO/FOCUS)	ΔL+	FILE	HIT-MASTER	MR5	MR3
KR3	—	DSP OFF	EQ ON	FLAT	Δf+	ASFC/DELAY UP	ACTIVE NB	—	MR1

SEGMENT
DIGIT
SEG13/KS0 SEG12/KS1 SEG14/KS2 SEG3/KS3 SEG8/KS4 SEG7/KS5 SEG6/KS6 SEG11/KS7 SEG9 SEG10 SEG2 SEG1 SEG5 SEG4
DIG10 DIG9 DIG8 DIG7 DIG6 DIG5 DIG4 DIG3 DIG2 DIG1
KS0 KS1 KS2 KS3 KS4 KS5 KS6 KS7
KS6
M38173M6–163EP
SEG8 SEG9 SEG10 SEG11 SEG12 SEG13 SEG14 SEG15 SEG16 SEG17 SEG18 DIG3 DIG4 DIG5 DIG6 DIG7 DIG8 DIG9 DIG10 DIG11 DIG12 P15 P16 P17
SEGMENT SEG15 — SEG7 (65)
ALED — SEG6 (66)
FLED — SEG5 (67)
N.C — SEG4 (68)
CE — P83 (69)
MPX control: MC — P82 (70), MB — P81 (71), MA — P80 (72)
VCC (73)
VEE (74)
AVSS (75)
VREF (76)
(F2, F4, F6, F8, F10, F12, F14) F0 — AN7 (77)
F13 — AN6 (78)
F11 — AN5 (79)
F9 — AN4 (80)
P20 (40) KR0 — K0
P21 (39) KR1 — K1
P22 (38) KR2 — K2
P23 (37) KR3 — K3
Key return
4×8(seg)
P24 (36) ECLK
P25 (35) EDATA
EEPROM
P26 (34) SBUSY
P27 (33) SDATA
Serial
VSS (32)
XOUT (31)
XIN (30)
XCOUT (29)
XCIN (28)
RESET (27)
P40 (26) EN0
P41 (25) EN1
Rotary encoder
AN3 (1) F7
AN2 (2) F5
AN1 (3) F3
AN0 (4) F1
P57 (5) SYNC
SCLK2 (6) CLOCK
SOUT2 (7) DATA
P54 (8) BUSY
P53 (9) GEST
SCLK1 (10) BCK
SOUT1 (11) CD
P50 (12) WCK
P65 (13) IC
P64 (14) MUTE
P63 (15) DMUTE
P62 (16) ALC
P61 (17)
P60 (18) PEQON
P47 (19) SELST1
P46 (20) SELCLK
P45 (21) SELDATA
P44 (22) GECLK
P43 (23) GEDATA
INT2 (24) READY
BAND PASS FILTER
Display microcomputer
DSP
TC9162 x3
Electronic VOL

CIRCUIT DESCRIPTION

IC1(M38173M6-163FP)

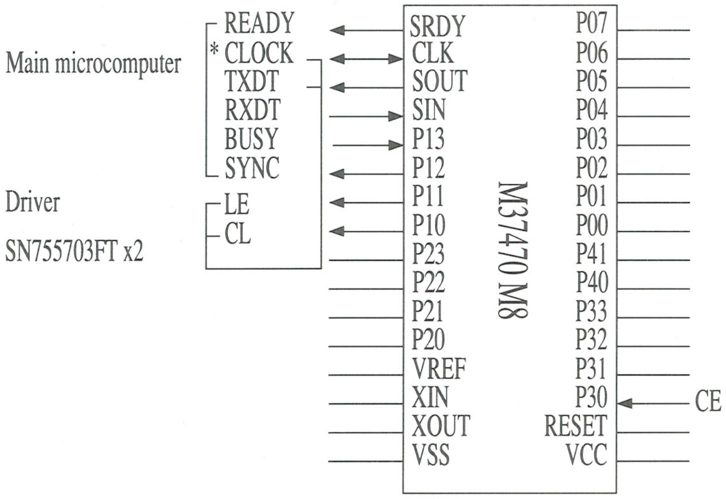
Pin NO.	Pin name	I/O	Name	Description
1	P73/AN3	I	F_7	625Hz analog signal input (input directly from the filter circuit)
2	P72/AN2	I	F_5	250Hz analog signal input (input directly from the filter circuit)
3	P71/AN1	I	F_3	98Hz analog signal input (input directly from the filter circuit)
4	P70/AN0	I	F_1	40Hz analog signal input (input directly from the filter circuit)
5	P57/$\overline{S_{RDY2}}$	I	SYNC	Input the signal that specifies the type of data transferred from the main microcomputer to the display microcomputer. H:Display mode data L:Level or point data
6	P56/S_{CLK2}	O	CLOCK	Output the clock signal for display data transfer from the main microcomputer to the display microcomputer.
7	P55/S_{OUT2}	O	DATA	Output the display data signal from the main microcomputer to the display microcomputer.
8	P54/S_{IN2}	O	BUSY	Output the signal that indicates display data transfer from the main microcomputer to the display microcomputer. H:Display data is being transferred L:others
9	P53/$\overline{S_{RDY1}}$/ $\overline{CS}$/S_{CLK12}	O	GEST	Output the clock signal for controlling electronic VR LC7522 for graphic equalizer. H:effective L:invalidity
10	P52/S_{CLK11}	O	BCK	DSP YSS215-F control clock signal output
11	P51/S_{OUT1}	O	CD	DSP YSS215-F control data signal output
12	P50/S_{IN1}	O	WCK	DSP YSS215-F control latch signal output
13	P65	O	IC	DSP YSS215-F control initialize signal output
14	P64	O	$\overline{\text{MUTE}}$	Line muting circuit control signal output H:off L:on
15	P63/$CNTR_1$	O	$\overline{\text{DMUTE}}$	Noise gate circuit control signal output (H: Dolby) H:Noise gate does not operate L:Noise gate operates
16	P62/$CNTR_0$	O	ALC	MIC muting control signal output H:on(others) L:off(KARAOKE)
17	P61/PWM_1	I	NC	Unused (CMOS level input/CMOS 3-state output input/output terminal)
18	P60/PWM_0	O	$\overline{\text{PEQON}}$	Equalizer circuit control selector IC TC9215P control signal output H:EQ off L:EQ on
19	P47/T_{3OUT}	O	SELST1	Selector TC9162N TC9163N control strobe signal output
20	P46/T_{1OUT}	O	SELCLK	Selector TC9162N TC9163N control clock signal output
21	P45	O	SELDATA	Selector TC9162N TC9163N control data signal output
22	P44/$\overline{INT_4}$	O	GECLK	Graphic equalizer electronic VR LC7522 control clock signal output
23	P43/$\overline{INT_3}$	O	GEDATA	Graphic equalizer electronic VR LC7522 control data signal output
24	P42/$\overline{INT_2}$	I	READY	Input the signal that enables display data transfer from the main computer to the display microcomputer. H:Display data transfer is not possible L:Display data transfer is possible
25	P41/$\overline{INT_1}$	I	EN1	Rotary encoder EC16B phase B signal input for multi controller
26	P40/$\overline{INT_0}$	I	EN0	Rotary encoder EC16B phase A signal input for multi controller
27	$\overline{\text{RESET}}$	I	$\overline{\text{RESET}}$	Reset signal detection H:others L:reset
28	X_{CIN}	I	V_{SS}	Unused (clock input terminal for the clock)
29	X_{COUT}	O	NC	Unused (clock output terminal for the clock)
30	X_{IN}	I	X_{IN}	System clock input (6.3MHz ceramic lock)
31	X_{OUT}	O	X_{OUT}	System clock output (6.3MHz ceramic lock)
32	V_{SS}			GND
33	P27	I/O	SDATA	System serial data signal input/output
34	P26	I/O	SBUSY	System serial busy signal input/output
35	P25	I/O	EDATA	E^2PROM data signal input/output
36	P24	O	ECLK	E^2PROM control clock signal output
37	P23	I	KR3	Key return signal input H:on L:off
38	P22	I	KR2	Key return signal input H:on L:off
39	P21	I	KR1	Key return signal input H:on L:off
40	P20	I	KR0	Key return signal input H:on L:off

CIRCUIT DESCRIPTION

Pin NO.	Pin name	I/O	Name	Description
41	P17/DIG15	O	DIG01	Fluorescent display grid G01B (pin 94) drive signal output H:on L:off
42	P16/DIG14	O	DIG02	Fluorescent display grid G02B (pin 93) drive signal output H:on L:off
43	P15/DIG13	O	DIG03	Fluorescent display grid G03B (pin 92) drive signal output H:on L:off
44	P14/DIG12	O	DIG04	Fluorescent display grid G04B (pin 91) drive signal output H:on L:off
45	P13/DIG11	O	DIG05	Fluorescent display grid G05B (pin 90) drive signal output H:on L:off
46	P12/DIG10	O	DIG06	Fluorescent display grid G06B (pin 89) drive signal output H:on L:off
47	P11/DIG9	O	DIG07	Fluorescent display grid G07B (pin 88) drive signal output H:on L:off
48	P10/DIG8	O	DIG08	Fluorescent display grid G08B (pin 87) drive signal output H:on L:off
49	P07/SEG23/DIG7	O	DIG09	Fluorescent display grid G09B (pin 86) drive signal output H:on L:off
50	P06/SEG22/DIG6	O	DIG10	Fluorescent display grid G10B (pin 85) drive signal output H:on L:off
51	P05/SEG21/DIG5	O	SEG04	Fluorescent display segment B04 (pin 83) drive signal output H:on L:off
52	P04/SEG20/DIG4	O	SEG05	Fluorescent display segment B05 (pin 82) drive signal output H:on L:off
53	P03/SEG19/DIG3	O	SEG01	Fluorescent display segment B01 (pin 81) drive signal output H:on L:off
54	P02/SEG18/DIG2	O	SEG02	Fluorescent display segment B02 (pin 80) drive signal output H:on L:off
55	P01/SEG17/DIG1	O	SEG10	Fluorescent display segment B10 (pin 79) drive signal output H:on L:off
56	P00/SEG16/DIG0	O	SEG09	Fluorescent display segment B09 (pin 78) drive signal output H:on L:off
57	P37/SEG15	O	SEG11/KS7	Fluorescent display segment B11 (pin 77) drive signal output KEY SCAN 7 signal output H:on L:off
58	P36/SEG14	O	SEG06/KS6	Fluorescent display segment B06 (pin 76) drive signal output KEY SCAN 6 signal output H:on L:off
59	P35/SEG13	O	SEG07/KS5	Fluorescent display segment B07 (pin 75) drive signal output KEY SCAN 5 signal output H:on L:off
60	P34/SEG12	O	SEG08/KS4	Fluorescent display segment B08 (pin 74) drive signal output KEY SCAN 4 signal output H:on L:off
61	P33/SEG11	O	SEG03/KS3	Fluorescent display segment B03 (pin 73) drive signal output KEY SCAN 3 signal output H:on L:off
62	P32/SEG10	O	SEG14/KS2	Fluorescent display segment B14 (pin 72) drive signal output KEY SCAN 2 signal output H:on L:off
63	P31/SEG9	O	SEG12/KS1	Fluorescent display segment B12 (pin 71) drive signal output KEY SCAN 1 signal output H:on L:off
64	P30/SEG8	O	SEG13/KS0	Fluorescent display segment B13 (pin 70) drive signal output KEY SCAN 0 signal output H:on L:off
65	P87/SEG7	O	SEG15	FL display segment B15 (pin 84) drive signal output H:on L:off
66	P86/SEG6	O	ALED	AI LAMP ON/OFF control signal output H:on L:off
67	P85/SEG5	O	FLED	FILE LAMP ON/OFF control signal output H:on L:off
68	P84/SEG4	I	NC	Unused (CMOS level input/high voltage resistance P channel open drain output input/output terminal)
69	P83/SEG3	I	$\overline{CE}$	Back up detection H:Others L:Back up
70	P82/SEG2	O	MC	Multiplexer TC74HC4051 control signal output (TC74HC4051: $F_{2, 4, 6, 8, 10, 12, 14}$ analog signal selection)
71	P81/SEG1	O	MB	Multiplexer TC74HC4051 control signal output
72	P80/SEG0	O	MA	Multiplexer TC74HC4051 control signal output
73	V_{CC}	I	V_{CC}	Microcomputer power input +5V ± 10%
74	V_{EE}	I	GND	Pull down power input GND
75	AV_{SS}	I	AV_{SS}	Analog-to-digital converter input ground V_{SS}
76	V_{REF}	I	V_{REF}	Analog-to-digital converter reference voltage input +5V
77	P77/AN7	I	F_2,F_4,F_6,F_8,F_{10},F_{12},F_{14},	Analog signal input via multiplexer TC74HC4051 F_2:63Hz F_4:160Hz F_6:400Hz F_8:1kHz F_{10}:2.5kHz F_{12}:6.3kHz F_{14}:16kHz
78	P76/AN6	I	F_{13}	10kHz analog signal input (input directly from the filter circuit)
79	P75/AN5	I	F_{11}	3.9kHz analog signal input (input directly from the filter circuit)
80	P74/AN4	I	F_9	1.5kHz analog signal input (input directly from the filter circuit)

CIRCUIT DESCRIPTION

X11-342 IC3 Port layout


Main microcomputer
READY
* CLOCK
TXDT
RXDT
BUSY
SYNC
Driver
SN755703FT x2
LE
CL
M37470 M8
SRDY
CLK
SOUT
SIN
P13
P12
P11
P10
P23
P22
P21
P20
VREF
XIN
XOUT
VSS
P07
P06
P05
P04
P03
P02
P01
P00
P41
P40
P33
P32
P31
P30
RESET
VCC
CE

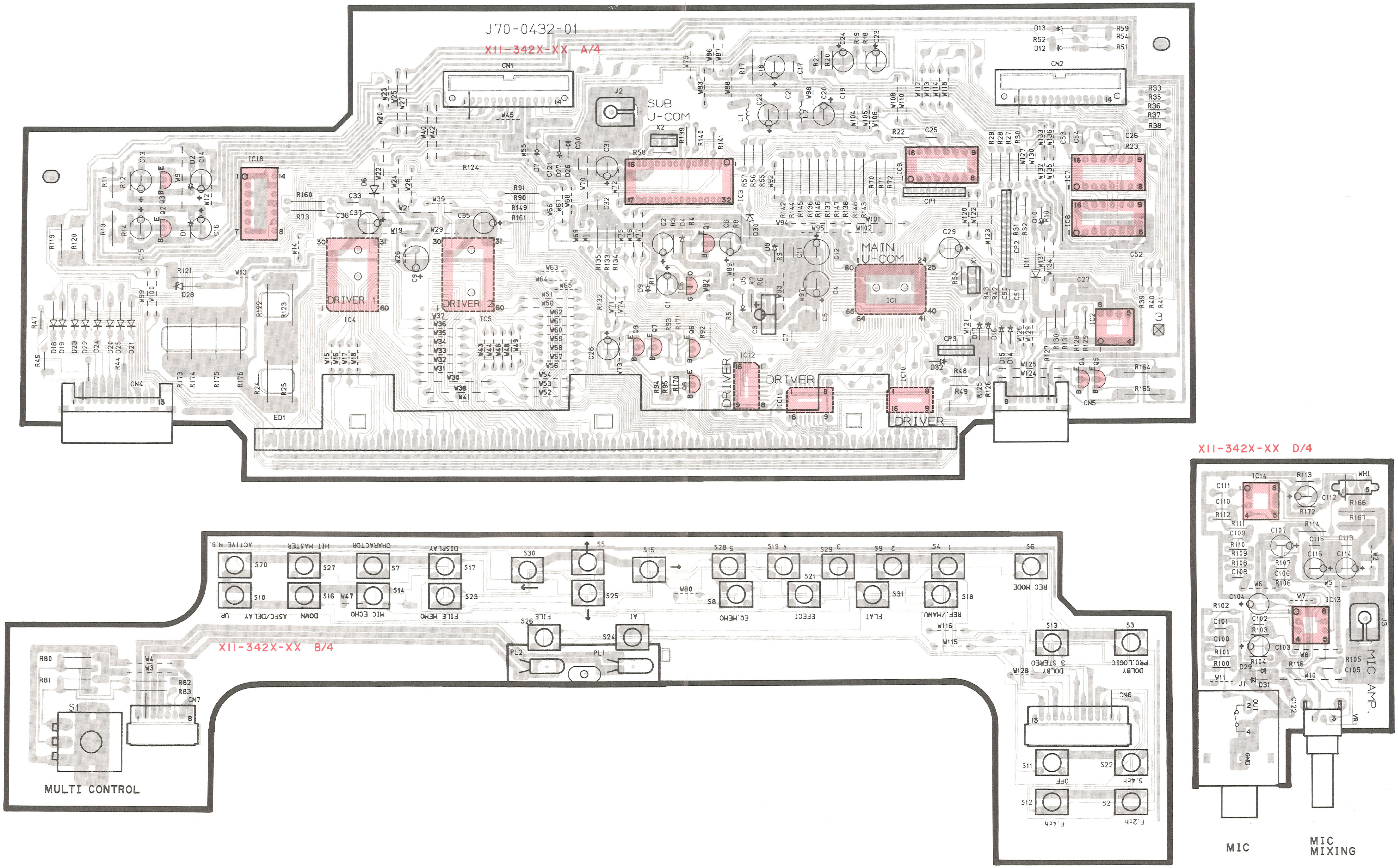
*CLOCK: For microcomputer communication and driver

Pin function

Pin NO.	Pin name	I/O	Name	Description
1	SRDY	O	READY	Transmission request to the main computer at a rising edge
2	CLK	O	CLOCK	Clock for transmission and reception
3	SOUT	O	TXDT	Transmit data (to driver)
4	SIN	I	RXDT	Receive data (from main microcomputer)
5	P13	I	BUSY	Main transmission H
6	P12	O	SYNC	Header transmission H, data transmission L
7	P11	O	LE	Driver latch
8	P10	O	CL	Driver clear
9	P23			NC
10	P22			NC
11	P21			NC
12	P20			NC
13	VREF			Reference voltage for the display; connect to +5V.
14	XIN			Connect to the 8MHz crystal oscillator.
15	XOUT			Connect to the 8MHz crystal oscillator.
16	VSS			GND
17	VCC			+5V
18	RESET			Reset
19	P30	I	CE	Backup chip enable
20	P31			NC
21	P32			NC
22	P33			NC
23	P40			NC
24	P41			NC
25	P00			NC
26	P01			NC
27	P02			
28	P03			
29	P04			
30	P05			
31	P06			
32	P07			

A B C D E F G H I J

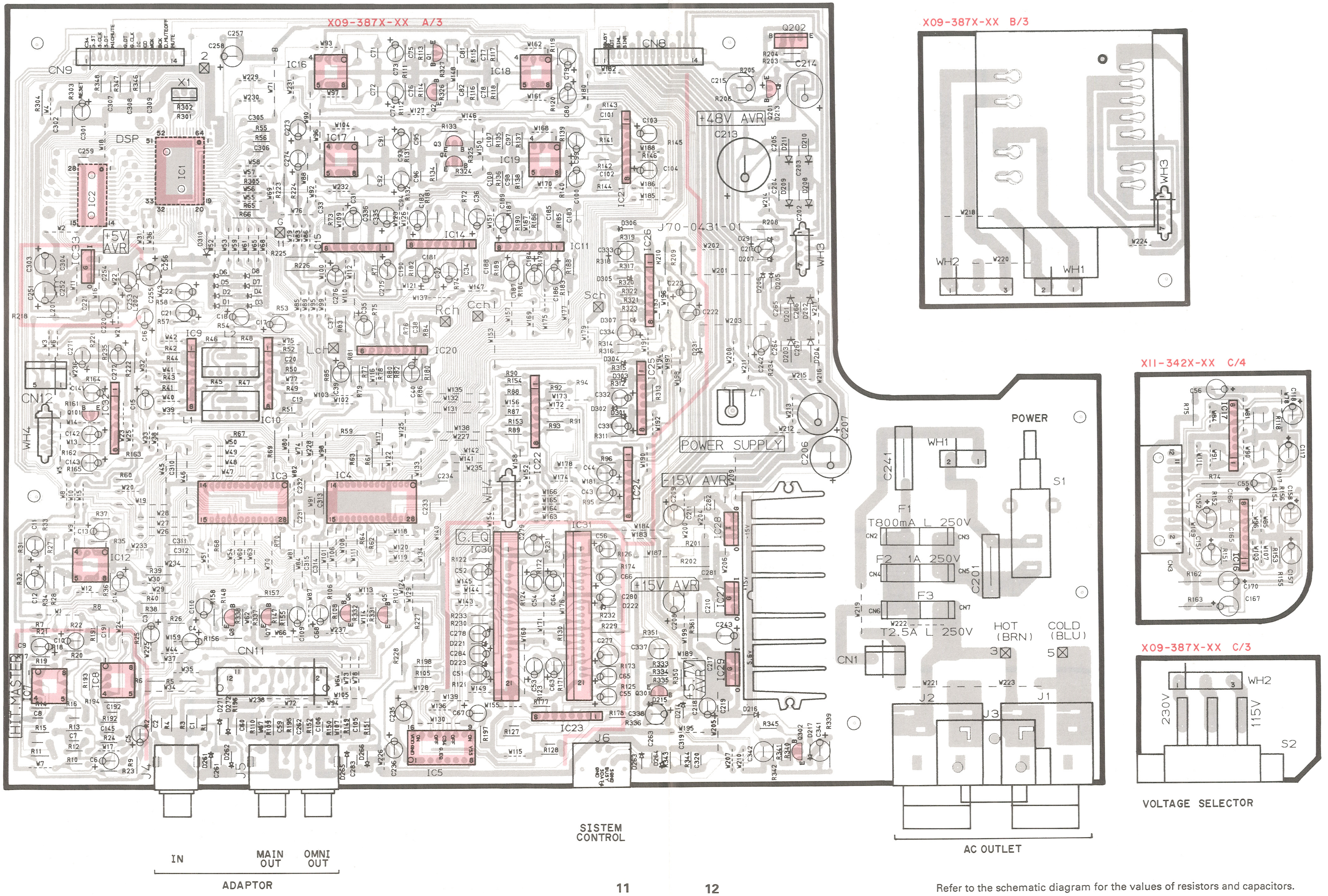
PC BOARD (Component side view)


J70-0432-01
X11-342X-XX A/4
CN1
CN2
IC18
SUB U-COM
MAIN U-COM
DRIVER 1
IC4
DRIVER 2
IC5
IC1
IC2
IC7
IC8
IC9
IC3
DRIVER
IC12
IC11
IC10
CN4
CN5
ED1
X11-342X-XX B/4
ACTIVE N.B.
HIT MASTER
CHARACTOR
DISPLAY
UP
ASFC/DELAY
DOWN
MIC ECHO
FILE MEMO
FILE
AI
EQ.MEMO
EFFECT
FLAT
REF./MANU.
REC MODE
DOLBY 3 STEREO
DOLBY PRO.LOGIC
OFF
5.4ch
F.4ch
F.2ch
CN6
CN7
PL1
PL2
MULTI CONTROL
X11-342X-XX D/4
IC14
IC13
J1
J3
VR1
MIC AMP.
MIC
MIC MIXING

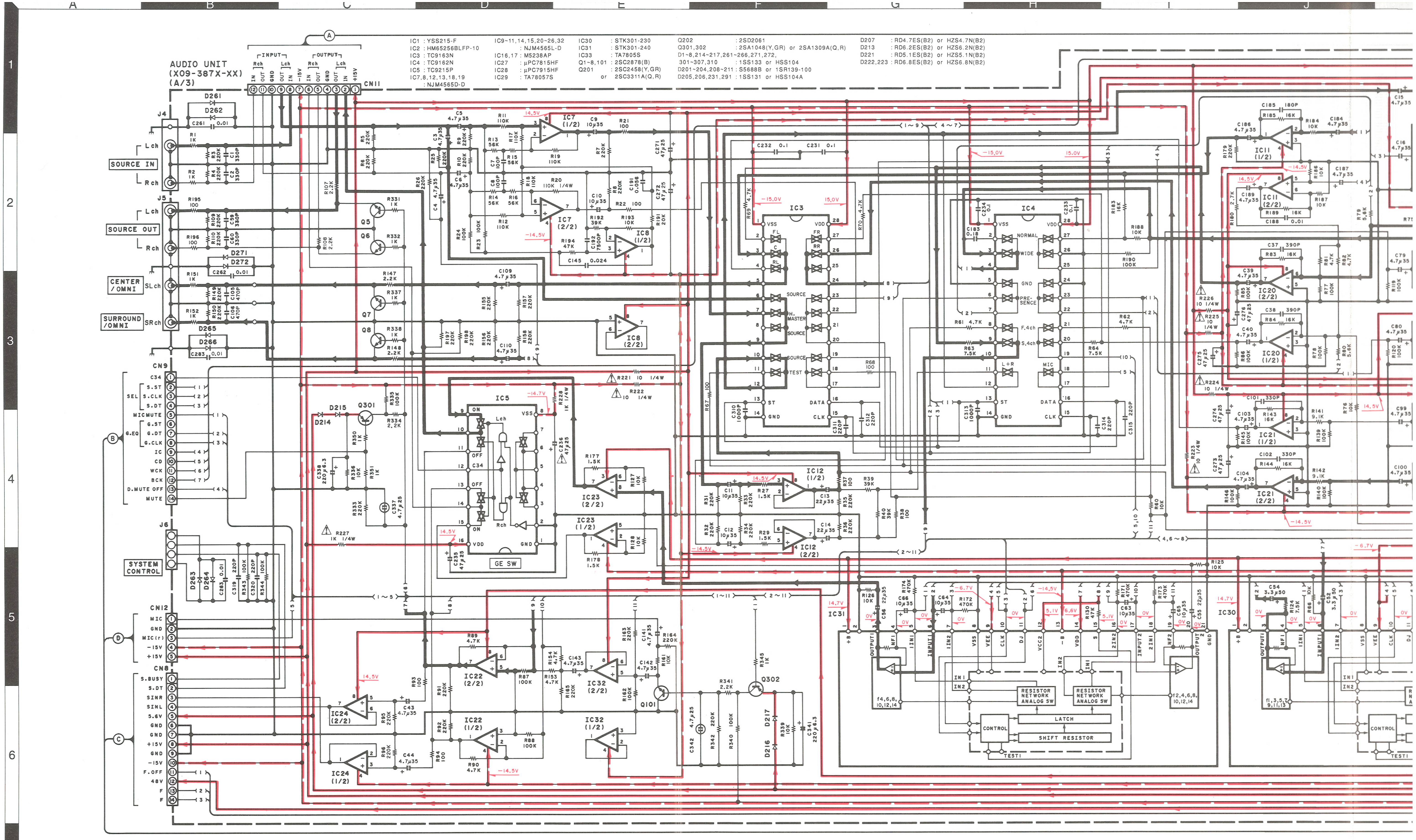
1
2
3
4
5
6
7

Refer to the schematic diagram for the values of resistors and capacitors.

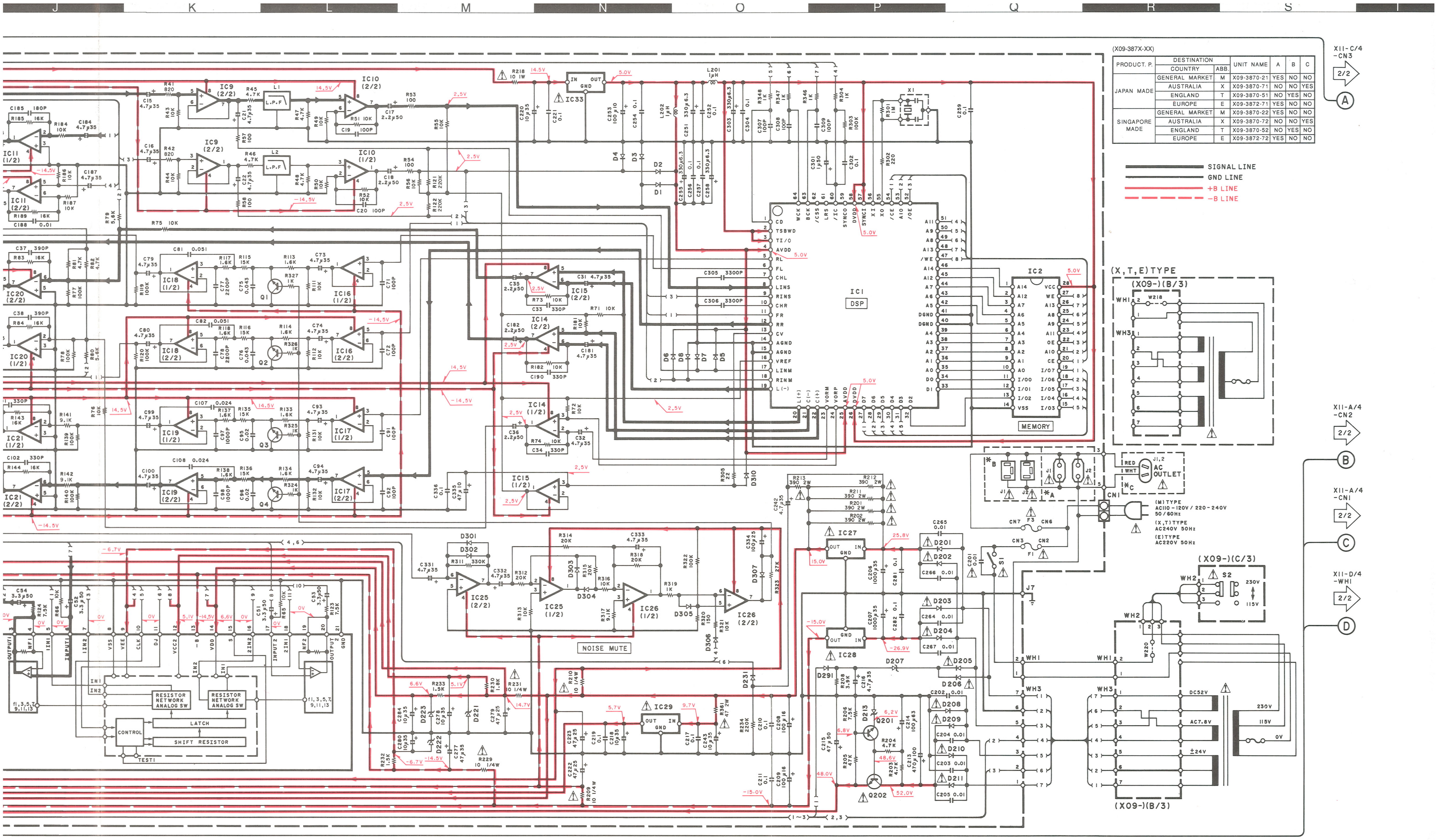
PC BOARD (Component side view)


X09-387X-XX A/3
X09-387X-XX B/3
X11-342X-XX C/4
X09-387X-XX C/3
CN9
DSP
IC1
IC2
+5V AVR
CN12
CN11
IC16
IC17
IC18
IC19
IC20
IC3
IC4
IC5
IC23
IC30
IC31
G.EQ
Rch
Cch
Lch
Sch
J70-0431-01
+48V AVR
C213
POWER SUPPLY
+15V AVR
-15V AVR
-5.7V AVR
J6
J4
J5
WH1
WH2
WH3
POWER
S1
F1
T800mA L 250V
F2 1A 250V
F3
T2.5A L 250V
HOT (BRN)
COLD (BLU)
CN1
J1
J2
J3
AC OUTLET
230V
115V
S2
VOLTAGE SELECTOR
IN
MAIN OUT
OMNI OUT
ADAPTOR
SISTEM CONTROL

Refer to the schematic diagram for the values of resistors and capacitors.


AUDIO UNIT
(X09-387X-XX)
(A/3)
IC1 : YSS215-F
IC2 : HM65256BLFP-10
IC3 : TC9163N
IC4 : TC9162N
IC5 : TC9215P
IC7,8,12,13,18,19 : NJM4565D-D
IC9~11,14,15,20~26,32 : NJM4565L-D
IC16,17 : M5238AP
IC27 : µPC7815HF
IC28 : µPC7915HF
IC29 : TA78057S
IC30 : STK301-230
IC31 : STK301-240
IC33 : TA7805S
Q1~8,101 : 2SC2878(B)
Q201 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
Q202 : 2SD2061
Q301,302 : 2SA1048(Y,GR) or 2SA1309A(Q,R)
D1~8,214~217,261~266,271,272, 301~307,310 : 1SS133 or HSS104
D201~204,208~211 : S5688B or 1SR139-100
D205,206,231,291 : 1SS131 or HSS104A
D207 : RD4.7ES(B2) or HZS4.7N(B2)
D213 : RD6.2ES(B2) or HZS6.2N(B2)
D221 : RD5.1ES(B2) or HZS5.1N(B2)
D222,223 : RD6.8ES(B2) or HZS6.8N(B2)
INPUT
OUTPUT
CN11
J4
SOURCE IN
Lch
Rch
J5
SOURCE OUT
CENTER /OMNI
SLch
SURROUND /OMNI
SRch
CN9
SEL
S.ST
S.CLK
S.DT
MICMUTE
G.EQ
G.ST
G.DT
G.CLK
IC
CD
WCK
BCK
D.MUTE OFF
MUTE
J6
SYSTEM CONTROL
CN12
MIC
GND
MIC(r)
-15V
+15V
CN8
S.BUSY
S.DT
SINR
SINL
5.6V
GND
+15V
-15V
F.OFF
48V
F
IC3
IC4
IC5
GE SW
IC7
IC8
IC11
IC12
IC20
IC21
IC22
IC23
IC24
IC30
IC31
IC32
Q101
Q301
Q302
RESISTOR NETWORK ANALOG SW
CONTROL
LATCH
SHIFT RESISTOR
TEST1
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7

• DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.


J
K
L
M
N
O
P
Q
R
S
T
IC1
DSP
IC2
MEMORY
IC9 (2/2)
IC9 (2/2)
IC10 (2/2)
IC10 (1/2)
IC11 (1/2)
IC11 (2/2)
IC14 (2/2)
IC14 (1/2)
IC15 (2/2)
IC15 (1/2)
IC16 (1/2)
IC16 (2/2)
IC17 (1/2)
IC17 (2/2)
IC18 (1/2)
IC18 (2/2)
IC19 (1/2)
IC19 (2/2)
IC20 (2/2)
IC20 (1/2)
IC21 (1/2)
IC21 (2/2)
IC25 (2/2)
IC25 (1/2)
IC26 (1/2)
IC26 (2/2)
IC27
IC28
IC29
IC33
L.P.F
NOISE MUTE
RESISTOR NETWORK ANALOG SW
LATCH
CONTROL
SHIFT RESISTOR
TEST1
(X,T,E) TYPE
(X09-)(B/3)
(X09-)(C/3)
(X09-)(B/3)
AC OUTLET
CN1
(M) TYPE AC110-120V / 220-240V 50/60Hz
(X,T) TYPE AC240V 50Hz
(E) TYPE AC220V 50Hz
X11-C/4 -CN3 2/2
X11-A/4 -CN2 2/2
X11-A/4 -CN1 2/2
X11-D/4 -WH1 2/2
A
B
C
D
DC52V
AC7.8V
±24V
230V
115V
0V

(X09-387X-XX)

PRODUCT. P.	DESTINATION COUNTRY	DESTINATION ABB.	UNIT NAME	A	B	C
JAPAN MADE	GENERAL MARKET	M	X09-3870-21	YES	NO	NO
	AUSTRALIA	X	X09-3870-71	NO	NO	YES
	ENGLAND	T	X09-3870-51	NO	YES	NO
	EUROPE	E	X09-3872-71	YES	NO	NO
SINGAPORE MADE	GENERAL MARKET	M	X09-3870-22	YES	NO	NO
	AUSTRALIA	X	X09-3870-72	NO	NO	YES
	ENGLAND	T	X09-3870-52	NO	YES	NO
	EUROPE	E	X09-3872-72	YES	NO	NO

SIGNAL LINE
GND LINE
+B LINE
−B LINE

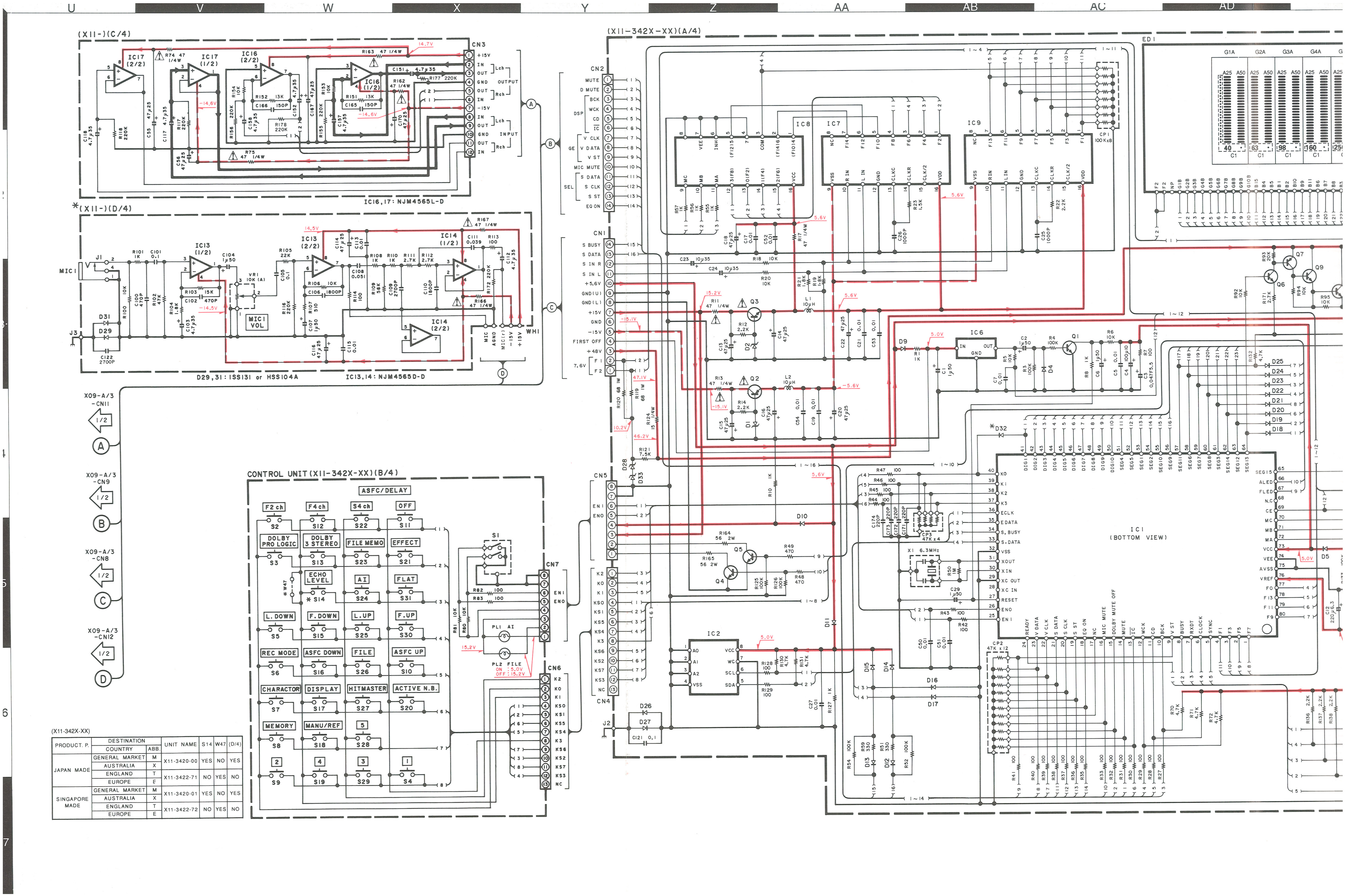
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

(1/2)

Y09-4290-21

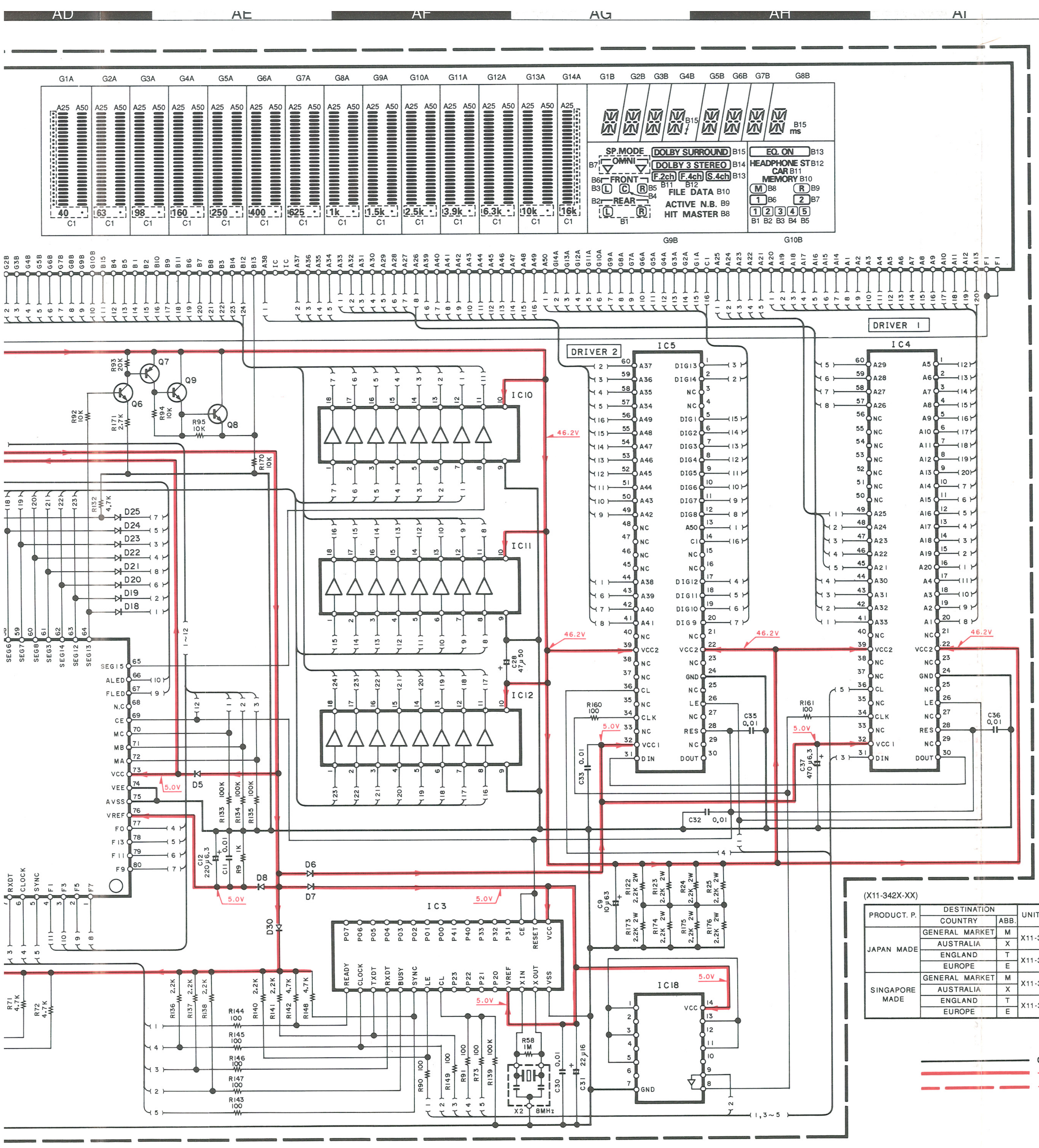
GE-970

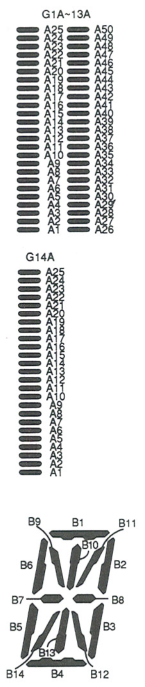
KENWOOD


U
V
W
X
Y
Z
AA
AB
AC
AD
(X11-)(C/4)
IC17 (2/2)
IC17 (1/2)
IC16 (2/2)
IC16 (1/2)
R74 47 1/4W
R163 47 1/4W
R162 47 1/4W
R177 220K
R75 47 1/4W
14.7V
-14.6V
CN3
+15V
IN
OUT
GND
-15V
Lch
Rch
OUTPUT
INPUT
IC16,17: NJM4565L-D
*(X11-)(D/4)
MIC1
J1
J3
IC13 (1/2)
IC13 (2/2)
IC14 (1/2)
IC14 (2/2)
VR1 10K (A)
MIC1 VOL
R167 47 1/4W
R166 47 1/4W
14.5V
-14.5V
D31
D29
C122 2700P
WH1
D29,31: 1SS131 or HSS104A
IC13,14: NJM4565D-D
X09-A/3 -CN11
X09-A/3 -CN9
X09-A/3 -CN8
X09-A/3 -CN12
1/2
A
B
C
D
CONTROL UNIT (X11-342X-XX) (B/4)
ASFC/DELAY
F2 ch
F4 ch
S4 ch
OFF
S2
S12
S22
S11
DOLBY PRO LOGIC
DOLBY 3 STEREO
FILE MEMO
EFFECT
S3
S13
S23
S21
ECHO LEVEL
AI
FLAT
*W47
*S14
S24
S31
L. DOWN
F. DOWN
L. UP
F. UP
S5
S15
S25
S30
REC MODE
ASFC DOWN
FILE
ASFC UP
S6
S16
S26
S10
CHARACTOR
DISPLAY
HITMASTER
ACTIVE N.B.
S7
S17
S27
S20
MEMORY
MANU/REF
5
S8
S18
S28
2
4
3
1
S9
S19
S29
S4
S1
R82 100
R83 100
PL1 AI
PL2 FILE
ON : 5.0V
OFF : 15.2V
15.2V
CN7
EN1
EN0
CN6
K2
K0
K1
KS0
KS1
KS5
KS4
K3
KS6
KS2
KS7
KS3
NC
(X11-342X-XX)(A/4)
CN2
MUTE
D MUTE
DSP
BCK
WCK
CD
IC
GE
V CLK
V DATA
V ST
MIC MUTE
SEL
S DATA
S CLK
S ST
EQ ON
CN1
S BUSY
S DATA
S IN R
S IN L
+5.6V
GND(U)
GND(L)
+15V
GND
-15V
FIRST OFF
+48V
7.6V
F1
F2
IC8
IC7
IC9
CP1 100Kx8
ED1
G1A
G2A
G3A
G4A
Q3
Q2
R11 47 1/4W
R13 47 1/4W
15.2V
-15.1V
5.6V
-5.6V
L1 10μH
L2 10μH
IC6
IN
OUT
GND
5.0V
Q1
D9
D4
Q7
Q9
Q6
D25
D24
D23
D22
D21
D20
D19
D18
*D32
IC1 (BOTTOM VIEW)
D5
X1 6.3MHz
CP3 47Kx4
CP2 47K x12
IC2
A0
A1
A2
VSS
VCC
WC
SCL
SDA
Q5
Q4
R164 56 2W
R165 56 2W
CN5
CN4
J2
D26
D27
D28
D33
D10
D11
D12
D13
D14
D15
D16
D17
47.1V
46.2V
10.2V
R121 7.5K

(X11-342X-XX)

PRODUCT. P.	DESTINATION		UNIT NAME	S14	W47	(D/4)
	COUNTRY	ABB.				
JAPAN MADE	GENERAL MARKET	M	X11-3420-00	YES	NO	YES
	AUSTRALIA	X				
	ENGLAND	T	X11-3422-71	NO	YES	NO
	EUROPE	E				
SINGAPORE MADE	GENERAL MARKET	M	X11-3420-01	YES	NO	YES
	AUSTRALIA	X				
	ENGLAND	T	X11-3422-72	NO	YES	NO
	EUROPE	E				

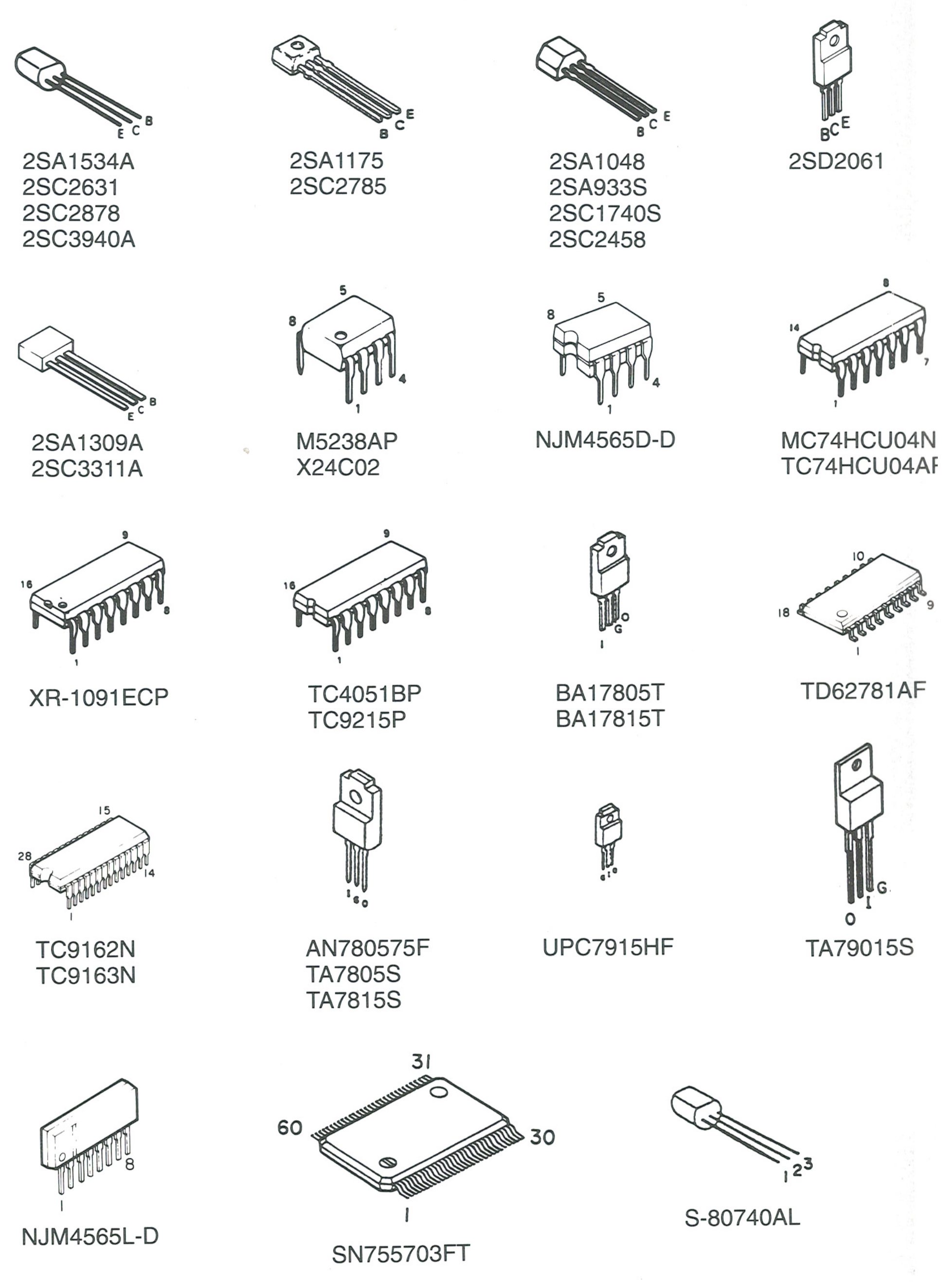

AD
AE
AF
AG
AH
AI
AJ
AK
AL
AM
AN
G1A
G2A
G3A
G4A
G5A
G6A
G7A
G8A
G9A
G10A
G11A
G12A
G13A
G14A
G1B
G2B
G3B
G4B
G5B
G6B
G7B
G8B
SP.MODE
OMNI
FRONT
REAR
DOLBY SURROUND
DOLBY 3 STEREO
F.2ch
F.4ch
S.4ch
FILE DATA
ACTIVE N.B.
HIT MASTER
EQ. ON
HEADPHONE ST
CAR
MEMORY
40
63
98
160
250
400
625
1k
1.5k
2.5k
3.9k
6.3k
10k
16k
ms
DRIVER 2
DRIVER 1
IC5
IC4
IC10
IC11
IC12
IC3
IC18
Q6
Q7
Q8
Q9
D5
D6
D7
D8
D30
46.2V
5.0V
RXDT
CLOCK
SYNC
READY
TXDT
BUSY
VCC
GND
RESET
XIN
XOUT
VSS
VREF
X2
8MHz


G1A~13A
G14A
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14

IC1 : M38173M6-163FP
IC2 : BR24C02
IC3 : M37470M8-200SP
IC4,5 : SN755703FT
IC6 : S-80740AL or MN1381-R(TA)
IC7,9 : XR-1091ECP
IC8 : TC4051BP
IC10~12 : TD62781AF
IC18 : MC74HCU04N or TC74HCU04AP

Q1,6,8,9 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
or 2SC1740S(Q,R) or 2SC2785(F,E)
Q2 : 2SA1534A(R,S)
Q3 : 2SC3940A(R,S)
Q4,5 : 2SC2631(R.S)
Q7 : 2SA1048(Y,GR) or 2SA1309A(Q,R)
or 2SA933S(Q,R) or 2SA1175(F,E)

D1,2 : RD6.2ES(B2) or HZS6.2N(B2)
D4~27,30,32 : 1SS131 or HSS104A
D28 : RD10ES(B) or HZS10N(B)
D33 : RD5.1ES(B2) or HZS5.1N(B2)


2SA1534A
2SC2631
2SC2878
2SC3940A
2SA1175
2SC2785
2SA1048
2SA933S
2SC1740S
2SC2458
2SD2061
2SA1309A
2SC3311A
M5238AP
X24C02
NJM4565D-D
MC74HCU04N
TC74HCU04AP
XR-1091ECP
TC4051BP
TC9215P
BA17805T
BA17815T
TD62781AF
TC9162N
TC9163N
AN780575F
TA7805S
TA7815S
UPC7915HF
TA79015S
NJM4565L-D
SN755703FT
S-80740AL
E
C
B
G
O
I
1
4
5
8
9
10
14
15
16
18
28
30
31
60

(X11-342X-XX)

PRODUCT. P.	DESTINATION		UNIT NAME	D32
	COUNTRY	ABB.		
JAPAN MADE	GENERAL MARKET	M	X11-3420-00	NO
	AUSTRALIA	X		
	ENGLAND	T	X11-3422-71	YES
	EUROPE	E		
SINGAPORE MADE	GENERAL MARKET	M	X11-3420-01	NO
	AUSTRALIA	X		
	ENGLAND	T	X11-3422-72	YES
	EUROPE	E		

GND LINE
+B LINE
−B LINE

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).⚠Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

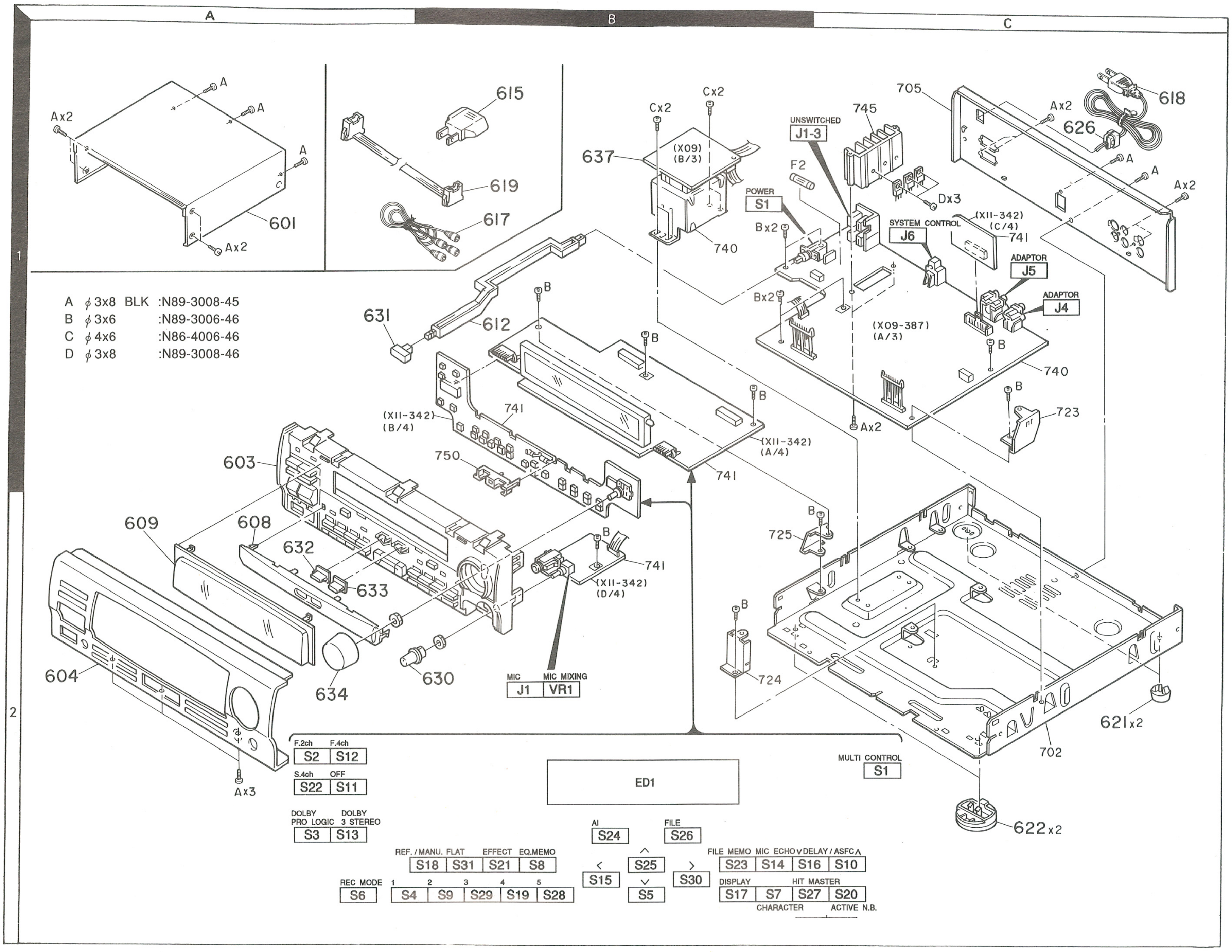
(2/2)

Y09-4290-21

GE-970

KENWOOD

EXPLODED VIEW


A
B
C
1
2
615
619
617
601
618
626
705
745
637
Cx2
(X09)
(B/3)
740
UNSWITCHED
J1-3
F2
POWER
S1
Bx2
Dx3
SYSTEM CONTROL
J6
(XII-342)
(C/4)
741
ADAPTOR
J5
ADAPTOR
J4
Ax2
Bx2
(X09-387)
(A/3)
723
A ϕ3x8 BLK :N89-3008-45
B ϕ3x6 :N89-3006-46
C ϕ4x6 :N86-4006-46
D ϕ3x8 :N89-3008-46
631
612
(XII-342)
(B/4)
(XII-342)
(A/4)
603
750
609
608
632
633
(XII-342)
(D/4)
725
724
702
604
634
630
MIC
J1
MIC MIXING
VR1
621x2
622x2
Ax3
F.2ch S2
F.4ch S12
S.4ch S22
OFF S11
DOLBY PRO LOGIC S3
DOLBY 3 STEREO S13
MULTI CONTROL S1
ED1
AI S24
FILE S26
REF./MANU. S18
FLAT S31
EFFECT S21
EQ.MEMO S8
REC MODE S6
1 S4
2 S9
3 S29
4 S19
5 S28
< S15
^ S25
v S5
> S30
FILE MEMO S23
MIC ECHO S14
∨DELAY S16
/ASFC∧ S10
DISPLAY S17
S7
HIT S27
MASTER S20
CHARACTER
ACTIVE N.B.

Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

⁎ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.1

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
GE-970:JAPAN MADE						
601	1A	*	A01-3077-11	METALLIC CABINET		
603	1A	*	A22-1642-11	SUB PANEL	MX	
603	1A	*	A22-1664-11	SUB PANEL	TE	
604	2A	*	A60-0435-12	PANEL	MX	
604	2A	*	A60-0497-12	PANEL	TE	
608	2A	*	B07-2248-03	ESCUTCHEON		
609	2A	*	B10-1981-03	FRONT GLASS		
-			B46-0096-33	WARRANTY CARD	X	
-			B46-0310-03	WARRANTY CARD	ET	
-		*	B60-1388-00	INSTRUCTION MANUAL (EN)		
-		*	B60-1389-00	INSTRUCTION MANUAL (FR/IT)	E	
-		*	B60-1390-00	INSTRUCTION MANUAL (SP)	ME	
-		*	B60-1391-00	INSTRUCTION MANUAL (C)	M	
-		*	B60-1393-00	INSTRUCTION MANUAL (GER/DUT)	E	
612	1B	*	D21-1729-03	EXTENSION SHAFT		
⚠ 615	1B		E03-0115-05	AC PLUG ADAPTER	M	
617	1B		E30-0615-05	AUDIO CORD		
⚠ 618	1C		E30-2592-15	AC POWER CORD	ME	
⚠ 618	1C		E30-2602-05	AC POWER CORD	T	
⚠ 618	1C		E30-2717-05	AC POWER CORD	X	
619	1B		E30-2628-05	CORD WITH CONNECTOR		
⚠ J1,J2	1B		E03-0141-05	AC OUTLET	X	
		*	H50-0703-04	ITEM CARTON CASE	MXE	
		*	H50-0835-04	ITEM CARTON CASE	T	
-		*	H10-5536-02	POLYSTYRENE FOAMED FIXTURE L	MXE	
-		*	H10-5537-02	POLYSTYRENE FOAMED FIXTURE R	MXE	
-		*	H10-5629-02	POLYSTYRENE FOAMED FIXTURE L	T	
-		*	H10-5630-02	POLYSTYRENE FOAMED FIXTURE R	T	
-			H13-0106-04	CARTON BOARD	X	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	MXE	
-			H25-0304-04	PROTECTION BAG	MXE	
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
-			H25-0656-04	PROTECTION BAG (0304 PRINTED)	T	
621	2C		J02-0370-05	FOOT REAR		
622	2C		J02-1040-05	FOOT FRONT		
⚠ 626	1C		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
630	2B		K29-3632-04	KNOB (MIC MIXING)	MX	
631	1A		K29-4015-04	KNOB (POWER)		
632	2A	*	K29-5761-14	KNOB (AI)		
633	1B	*	K29-5762-14	KNOB (FILE)		
634	2A	*	K29-5797-04	KNOB (MULTI CONTROL)		
637	1B	*	L07-0765-05	POWER TRANSFORMER	M	
637	1B	*	L07-0766-05	POWER TRANSFORMER	XTE	
A	1A		N89-3008-45	BINDING HEAD TAPTITE SCREW		
B	1B		N89-3006-46	BINDING HEAD TAPTITE SCREW		
C	1B		N86-4006-46	BINDING HEAD TAPTITE SCREW		
GE-970:SINGAPORE MADE						
601	1A	*	A01-3077-11	METALLIC CABINET		
603	1A	*	A22-1642-11	SUB PANEL	MX	

L:Scandinavia	**K:**USA	**P:**Canada
Y:PX(Far East, Hawaii)	**T:**England	**E:**Europe
Y:AAFES(Europe)	**X:**Australia	**M:**Other Areas

⚠ indicates safety critical components.

⁎ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.2

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
603	1A	*	A22-1664-11	SUB PANEL	TE	
604	2A	*	A60-0435-12	PANEL	MX	
604	2A	*	A60-0497-12	PANEL	TE	
608	2A	*	B07-2248-03	ESCUTCHEON		
609	2A	*	B10-1981-03	FRONT GLASS		
-			B46-0096-33	WARRANTY CARD	X	
-			B46-0310-03	WARRANTY CARD	ET	
-		*	B60-1388-00	INSTRUCTION MANUAL (EN)		
-		*	B60-1389-00	INSTRUCTION MANUAL (FR/IT)	E	
-		*	B60-1390-00	INSTRUCTION MANUAL (SP)	ME	
-		*	B60-1391-00	INSTRUCTION MANUAL (C)	M	
-		*	B60-1393-00	INSTRUCTION MANUAL (GER/DUT)	E	
612	1B	*	D21-1729-03	EXTENSION SHAFT		
⚠ 615	1B		E03-0115-05	AC PLUG ADAPTER	M	
617	1B		E30-0615-05	AUDIO CORD		
⚠ 618	1C		E30-2592-15	AC POWER CORD	ME	
⚠ 618	1C		E30-2602-05	AC POWER CORD	T	
⚠ 618	1C		E30-2717-05	AC POWER CORD	X	
619	1B		E30-2628-05	CORD WITH CONNECTOR		
⚠ J1,J2	1B		E03-0141-05	AC OUTLET	X	
		*	H50-0836-04	ITEM CARTON CASE	M	
		*	H50-0837-04	ITEM CARTON CASE	X	
		*	H50-0838-04	ITEM CARTON CASE	E	
		*	H50-0839-04	ITEM CARTON CASE	T	
-		*	H10-5631-02	POLYSTYRENE FOAMED FIXTURE L	MXE	
-		*	H10-5632-02	POLYSTYRENE FOAMED FIXTURE R	MXE	
-		*	H10-5633-02	POLYSTYRENE FOAMED FIXTURE L	T	
-		*	H10-5634-02	POLYSTYRENE FOAMED FIXTURE R	T	
-			H13-0107-14	CARTON BOARD	X	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	MXE	
-			H25-0304-04	PROTECTION BAG	MXE	
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
-			H25-0656-04	PROTECTION BAG (0304 PRINTED)	T	
621	2C		J02-0370-05	FOOT REAR		
622	2C		J02-1040-05	FOOT FRONT		
⚠ 626	1C		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
630	2B		K29-3632-04	KNOB (MIC MIXING)	MX	
631	1A		K29-4015-04	KNOB (POWER)		
632	2A	*	K29-5761-14	KNOB (AI)		
633	1B	*	K29-5762-14	KNOB (FILE)		
634	2A	*	K29-5797-04	KNOB (MULTI CONTROL)		
637	1B	*	L07-0765-05	POWER TRANSFORMER	M	
637	1B	*	L07-0766-05	POWER TRANSFORMER	XTE	
A	1A		N89-3008-45	BINDING HEAD TAPTITE SCREW		
B	1B		N89-3006-46	BINDING HEAD TAPTITE SCREW		
C	1B		N86-4006-46	BINDING HEAD TAPTITE SCREW		
AUDIO UNIT (X09-387X-XX)						
C1 ,2			CC45FSL1H331J	CERAMIC 330PF J		
C3 -6			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C3 -6			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C7 ,8			CC45FSL1H101J	CERAMIC 100PF J		

L:Scandinavia	**K:**USA	**P:**Canada
Y:PX(Far East, Hawaii)	**T:**England	**E:**Europe
Y:AAFES(Europe)	**X:**Australia	**M:**Other Areas

J:JAPAN MADE
S:SINGAPORE MADE

⚠ indicates safety critical components.

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.3

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C9 -12			CE04KW1V100M	ELECTRO 10UF 35WV		J
C9 -12			CE04LW1V100M	ELECTRO 10UF 35WV		S
C13 ,14			CE04KW1V220M	ELECTRO 22UF 35WV		J
C13 ,14			CE04LW1V220M	ELECTRO 22UF 35WV		S
C15 ,16			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C15 ,16			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C17 ,18			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		J
C17 ,18			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		S
C19 ,20			CC45FSL1H101J	CERAMIC 100PF J		
C21 ,22			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C21 ,22			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C31 ,32			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C31 ,32			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C33 ,34			CC45FSL1H331J	CERAMIC 330PF J		
C35 ,36			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		J
C35 ,36			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		S
C37 ,38			CK45FB1H391K	CERAMIC 390PF K		
C39 ,40			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C39 ,40			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C43 ,44			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C43 ,44			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C51 -54			CE04KW1H3R3M	ELECTRO 3.3UF 50WV		J
C51 -54			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		S
C55 ,56			CE04KW1V220M	ELECTRO 22UF 35WV		J
C55 ,56			CE04LW1V220M	ELECTRO 22UF 35WV		S
C59 ,60			CC45FSL1H331J	CERAMIC 330PF J		
C63 -66			CE04KW1V100M	ELECTRO 10UF 35WV		J
C63 -66			CE04LW1V100M	ELECTRO 10UF 35WV		S
C71 ,72			CC45FSL1H101J	CERAMIC 100PF J		
C73 ,74			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C73 ,74			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C75 ,76			CF92FV1H433J	MF 0.043UF J		
C77 ,78			CF92FV1H222J	MF 2200PF J		
C79 ,80			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C79 ,80			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C81 ,82			CF92FV1H513J	MF 0.051UF J		
C91 ,92			CC45FSL1H101J	CERAMIC 100PF J		
C93 ,94			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C93 ,94			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C95 ,96			CF92FV1H203J	MF 0.020UF J		
C97 ,98			CF92FV1H102J	MF 1000PF J		
C99 ,100			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C99 ,100			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C101,102			CC45FSL1H331J	CERAMIC 330PF J		
C103,104			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C103,104			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C105,106			CC45FSL1H221J	CERAMIC 220PF J		
C107,108			CF92FV1H243J	MF 0.024UF J		
C109,110			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C109,110			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C141-143			CE04KW1V4R7M	ELECTRO 4.7UF 35WV	MX	J
C141-143			CE04LW1V4R7M	ELECTRO 4.7UF 35WV	MX	S
C145			CF92FV1H243J	MF 0.024UF J		
C181			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C181			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S

L:Scandinavia **K:**USA **P:**Canada
Y:PX(Far East, Hawaii) **T:**England **E:**Europe
Y:AAFES(Europe) **X:**Australia **M:**Other Areas

J:JAPAN MADE
S:SINGAPORE MADE
⚠ indicates safety critical components.

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.4

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C182			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		J
C182			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		S
C183			CF92FV1H184J	MF 0.18UF J		
C184			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C184			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C185			CC45FSL1H181J	CERAMIC 180PF J		
C186,187			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C186,187			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C188			CF92FV1H103J	MF 0.010UF J		
C189			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C189			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C190			CC45FSL1H331J	CERAMIC 330PF J		
C191			CF92FV1H563J	MF 0.056UF J		
C192			CF92FV1H752J	MF 7500PF J		
⚠ C201			C91-1439-05	FILM 0.01UF 250VAC		
C202-205			CK45FF1H103Z	CERAMIC 0.010UF Z		
C206,207			CE04KW1V102M	ELECTRO 1000UF 35WV		J
C206,207			CE04LW1V102M	ELECTRO 1000UF 35WV		S
C208,209			CE04KW1C101M	ELECTRO 100UF 16WV		J
C208,209			CE04LW1C101M	ELECTRO 100UF 16WV		S
C210,211			CF92FV1H104J	MF 0.10UF J		
C213			CE04KW2A471M	ELECTRO 470UF 100WV		J
C213			CE04KW2A471M	ELECTRO 470UF 100WV		S
C214			CE04KW1J101M	ELECTRO 100UF 63WV		J
C214			CE04LW1J101M	ELECTRO 100UF 63WV		S
C215			CE04KW1H470M	ELECTRO 47UF 50WV		J
C215			CE04LW1H470M	ELECTRO 47UF 50WV		S
C216			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C216			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C217			CF92FV1H104J	MF 0.10UF J		
C218			CE04KW1V100M	ELECTRO 10UF 35WV		J
C218			CE04LW1V100M	ELECTRO 10UF 35WV		S
C219			CF92FV1H104J	MF 0.10UF J		
C220			CE04KW1V100M	ELECTRO 10UF 35WV		J
C220			CE04LW1V100M	ELECTRO 10UF 35WV		S
C221			CF92FV1H104J	MF 0.10UF J		
C222,223			CE04KW1E470M	ELECTRO 47UF 25WV		J
C222,223			CE04LW1E470M	ELECTRO 47UF 25WV		S
C231-234			CF92FV1H104J	MF 0.10UF J		
C235,236			CE04KW1E470M	ELECTRO 47UF 25WV		J
C235,236			CE04LW1E470M	ELECTRO 47UF 25WV		S
C242			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C242			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C243			CE04KW1V100M	ELECTRO 10UF 35WV		J
C243			CE04LW1V100M	ELECTRO 10UF 35WV		S
C251			CE04KW0J331M	ELECTRO 330UF 6.3WV		J
C251			CE04LW0J331M	ELECTRO 330UF 6.3WV		S
C252			CF92FV1H104J	MF 0.10UF J		
C253			CE04KW1A101M	ELECTRO 100UF 10WV		J
C253			CE04LW1A101M	ELECTRO 100UF 10WV		S
C254			CF92FV1H104J	MF 0.10UF J		
C255			CE04KW0J331M	ELECTRO 330UF 6.3WV		J
C255			CE04LW0J331M	ELECTRO 330UF 6.3WV		S
C256,257			CF92FV1H104J	MF 0.10UF J		
C258			CE04KW0J331M	ELECTRO 330UF 6.3WV		J

L:Scandinavia **K:**USA **P:**Canada
Y:PX(Far East, Hawaii) **T:**England **E:**Europe
Y:AAFES(Europe) **X:**Australia **M:**Other Areas

J:JAPAN MADE
S:SINGAPORE MADE
⚠ indicates safety critical components.

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.5

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C258			CE04LW0J331M	ELECTRO 330UF 6.3WV		S
C259			CF92FV1H104J	MF 0.10UF J		
C261-267			CK45FF1H103Z	CERAMIC 0.010UF Z		
C271-277			CE04KW1E470M	ELECTRO 47UF 25WV		J
C271-277			CE04LW1E470M	ELECTRO 47UF 25WV		S
C278			CE04KW1V100M	ELECTRO 10UF 35WV		J
C278			CE04LW1V100M	ELECTRO 10UF 35WV		S
C279			CE04KW1E470M	ELECTRO 47UF 25WV		J
C279			CE04LW1E470M	ELECTRO 47UF 25WV		S
C280			CE04KW1V100M	ELECTRO 10UF 35WV		J
C280			CE04LW1V100M	ELECTRO 10UF 35WV		S
C281,282			CF92FV1H104J	MF 0.10UF J		
C283			CK45FF1H103Z	CERAMIC 0.010UF Z		
C284			CE04KW1V100M	ELECTRO 10UF 35WV		J
C284			CE04LW1V100M	ELECTRO 10UF 35WV		S
C301			CE04KW1H010M	ELECTRO 1.0UF 50WV		J
C301			CE04LW1H010M	ELECTRO 1.0UF 50WV		S
C302			CF92FV1H104J	MF 0.10UF J		
C303			CE04KW0J331M	ELECTRO 330UF 6.3WV		J
C303			CE04LW0J331M	ELECTRO 330UF 6.3WV		S
C304			CF92FV1H104J	MF 0.10UF J		
C305,306			CF92FV1H332J	MF 3300PF J		
C307-309			CC45FSL1H101J	CERAMIC 100PF J		
C310			C91-0757-05	CERAMIC 1000PF K		
C311,312			C91-0749-05	CERAMIC 220PF K		
C313			C91-0757-05	CERAMIC 1000PF K		
C314,315			C91-0749-05	CERAMIC 220PF K		
C319,320			CC45FSL1H221J	CERAMIC 220PF J		
C331-333			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C331-333			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C334			CE04KW1E101M	ELECTRO 100UF 25WV		J
C334			CE04LW1E101M	ELECTRO 100UF 25WV		S
C335			CE04KW1A470M	ELECTRO 47UF 10WV		J
C335			CE04LW1A470M	ELECTRO 47UF 10WV		S
C336			CF92FV1H104J	MF 0.10UF J		
C337			CE04HW1E4R7M	NP-ELEC 4.7UF 25WV		
C338			CE04KW0J221M	ELECTRO 220UF 6.3WV		J
C338			CE04LW0J221M	ELECTRO 220UF 6.3WV		S
C341			CE04KW0J221M	ELECTRO 220UF 6.3WV	MX	J
C341			CE04LW0J221M	ELECTRO 220UF 6.3WV	MX	S
C342			CE04HW1E4R7M	NP-ELEC 4.7UF 25WV	MX	
⚠ J1 ,2			E03-0108-05	AC OUTLET	ME	
⚠ J1 ,2			E03-0109-05	AC OUTLET	T	
J4			E63-0068-15	PHONO JACK SOURCE,OMNI IN		
J5			E63-0046-15	PHONO JACK SOURCE,OMNI OUT		
J6			E08-0312-05	RECTANGULAR RECEPTACLE S.CONT		
⚠ F1			F05-8013-05	FUSE (SEMKO) (250V T800MA)		
⚠ F3			F05-2525-05	FUSE (SEMKO) (250V T2.5A)	E	
CN2 ,3			J13-0075-05	FUSE CLIP		
CN6 ,7			J13-0075-05	FUSE CLIP	E	
L1 ,2			L79-0799-05	LC FILTER		
L201,202			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
X1			L78-0291-05	RESONATOR (11.289 MHz)		

L:Scandinavia **K:**USA **P:**Canada
Y:PX(Far East, Hawaii) **T:**England **E:**Europe
Y:AAFES(Europe) **X:**Australia **M:**Other Areas

J:JAPAN MADE
S:SINGAPORE MADE
⚠ indicates safety critical components.

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.6

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
A	1A		N89-3008-45	BINDING HEAD TAPTITE SCREW		
D	1C		N89-3008-46	BINDING HEAD TAPTITE SCREW		
R201,202			RS14KB3D391J	FL-PROOF RS 390 J 2W		
R208			RD14NB2E392J	RD 3.9K J 1/4W		
R209,210			RD14NB2E100J	RD 10 J 1/4W		
R211-213			RS14KB3D391J	FL-PROOF RS 390 J 2W		
R218			RS14DB3A100J	FL-PROOF RS 10 J 1W		
R221-226			RD14NB2E100J	RD 10 J 1/4W		
R227,228			RD14NB2E102J	RD 1.0K J 1/4W		
R229			RD14NB2E100J	RD 10 J 1/4W		
R231			RD14NB2E100J	RD 10 J 1/4W		
R361			RS14KB3D470J	FL-PROOF RS 47 J 2W		
⚠ S1			S40-1153-05	PUSH SWITCH POWER		
⚠ S2			S62-0001-05	SLIDE SWITCH AC VOLTAGE SEL	M	
D1 -8			HSS104	DIODE		
D1 -8			1SS133	DIODE		
D201-204			S5688B	DIODE		
D201-204			1SR139-100	DIODE		
D205,206			HSS104A	DIODE		
D205,206			1SS131	DIODE		
D207			HZS4.7N(B2)	ZENER DIODE		
D207			RD4.7ES(B2)	ZENER DIODE		
D208-211			S5688B	DIODE		
D208-211			1SR139-100	DIODE		
D213			HZS6.2N(B2)	ZENER DIODE		
D213			RD6.2ES(B2)	ZENER DIODE		
D214-217			HSS104	DIODE	MX	
D214-217			1SS133	DIODE	MX	
D214,215			HSS104	DIODE	TE	
D214,215			1SS133	DIODE	TE	
D221			HZS5.1N(B2)	ZENER DIODE		
D221			RD5.1ES(B2)	ZENER DIODE		
D222,223			HZS6.8N(B2)	ZENER DIODE		
D222,223			RD6.8ES(B2)	ZENER DIODE		
D231			HSS104A	DIODE		
D231			1SS131	DIODE		
D261-266			HSS104	DIODE		
D261-266			1SS133	DIODE		
D271,272			HSS104	DIODE		
D271,272			1SS133	DIODE		
D291			HSS104A	DIODE		
D291			1SS131	DIODE		
D301-307			HSS104	DIODE		
D301-307			1SS133	DIODE		
D310			HSS104	DIODE		
D310			1SS133	DIODE		
IC1			YSS215-F	IC(DOLBY PROLOGIC)		
IC2			HM65256BLFP-10	IC(8bit MICROPROCESSOR)		
IC3			TC9163N	IC(BILATERAL SWITCH X16)		
IC4			TC9162N	IC(ANALOG SWITCH ARRAY)		
IC5			TC9215P	IC(ANALOG SWITCH X 6)		
IC7 ,8			NJM4565D-D	IC(OP AMP X2)		
IC9 -11			NJM4565L-D	IC(OP AMP X2)		
IC12			NJM4565D-D	IC(OP AMP X2)		

L:Scandinavia **K:**USA **P:**Canada
Y:PX(Far East, Hawaii) **T:**England **E:**Europe
Y:AAFES(Europe) **X:**Australia **M:**Other Areas

⚠ indicates safety critical components.

PARTS LIST

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.7

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
IC14,15			NJM4565L-D	IC(OP AMP X2)		
IC16,17			M5238AP	IC(OP AMP X2)		
IC18,19			NJM4565D-D	IC(OP AMP X2)		
IC20-26			NJM4565L-D	IC(OP AMP X2)		
IC27			BA17815T	IC(VOLTAGE REGULATOR)		
IC27			TA7815S	IC(VOLTAGE REGULATOR/ +15V)		
IC28			TA79015S	IC(VOLTAGE REGULATOR/ -15V)		
IC28			UPC7915HF	IC(VOLTAGE REGULATOR/ -15V)		
IC29			AN780575F	IC(VOLTAGE REGULATOR/+5.75V)		
IC29			TA78057S	IC(VOLTAGE REGULATOR/+5.75V)		
IC30			STK301-230	IC(GRAPHIC EQ)		
IC31			STK301-240	IC(GRAPHIC EQ)		
IC32			NJM4565L-D	IC(OP AMP X2)	MX	
IC33			BA17805T	IC(VOLTAGE REGULATOR/ +5V)		
IC33			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
Q1 -8			2SC2878(B)	TRANSISTOR		
Q101			2SC2878(B)	TRANSISTOR	MX	
Q201			2SC1740S(Q,R)	TRANSISTOR		S
Q201			2SC2458(Y,GR)	TRANSISTOR		
Q201			2SC2785(F,E)	TRANSISTOR		S
Q201			2SC3311A(Q,R)	TRANSISTOR		
Q202			2SD2061	TRANSISTOR		
Q301			2SA1048(Y,GR)	TRANSISTOR	TE	
Q301			2SA1175(F,E)	TRANSISTOR	TE	S
Q301			2SA1309A(Q,R)	TRANSISTOR	TE	
Q301			2SA933S(Q,R)	TRANSISTOR	TE	S
Q301,302			2SA1048(Y,GR)	TRANSISTOR	MX	
Q301,302			2SA1175(F,E)	TRANSISTOR	MX	S
Q301,302			2SA1309A(Q,R)	TRANSISTOR	MX	
Q301,302			2SA933S(Q,R)	TRANSISTOR	MX	S
CONTROL UNIT (X11 – 342X – XX)						
PL1 ,2			B30-2406-05	LAMP PL(T4.2-12-0.1)		
C1 ,2			CE04KW1H010M	ELECTRO 1.0UF 50WV		J
C1 ,2			CE04LW1H010M	ELECTRO 1.0UF 50WV		S
C3			C90-1826-05	BACKUP 0.047F 5.5WV		
C4			CE04KW1A101M	ELECTRO 100UF 10WV		J
C4			CE04LW1A101M	ELECTRO 100UF 10WV		S
C5			CK45FF1H103Z	CERAMIC 0.010UF Z		
C6			CE04KW1H010M	ELECTRO 1.0UF 50WV		J
C6			CE04LW1H010M	ELECTRO 1.0UF 50WV		S
C7			CK45FF1H103Z	CERAMIC 0.010UF Z		
C9			CE04KW1J100M	ELECTRO 10UF 63WV		J
C9			CE04LW1J100M	ELECTRO 10UF 63WV		S
C11			CK45FF1H103Z	CERAMIC 0.010UF Z		
C12			CE04KW0J221M	ELECTRO 220UF 6.3WV		J
C12			CE04LW0J221M	ELECTRO 220UF 6.3WV		S
C13 -16			CE04KW1E470M	ELECTRO 47UF 25WV		J
C13 -16			CE04LW1E470M	ELECTRO 47UF 25WV		S
C17			CK45FF1H103Z	CERAMIC 0.010UF Z		
C18			CE04KW1E470M	ELECTRO 47UF 25WV		J
C18			CE04LW1E470M	ELECTRO 47UF 25WV		S
C19			CK45FF1H103Z	CERAMIC 0.010UF Z		
C20			CE04KW1E470M	ELECTRO 47UF 25WV		J
C20			CE04LW1E470M	ELECTRO 47UF 25WV		S

L:Scandinavia **K:**USA **P:**Canada
Y:PX(Far East, Hawaii) **T:**England **E:**Europe
Y:AAFES(Europe) **X:**Australia **M:**Other Areas

J:JAPAN MADE
S:SINGAPORE MADE

⚠ indicates safety critical components.

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

No.8

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C21			CK45FF1H103Z	CERAMIC 0.010UF Z		
C22			CE04KW1E470M	ELECTRO 47UF 25WV		J
C22			CE04LW1E470M	ELECTRO 47UF 25WV		S
C23 ,24			CE04KW1V100M	ELECTRO 10UF 35WV		J
C23 ,24			CE04LW1V100M	ELECTRO 10UF 35WV		S
C25 ,26			CF92FV1H102J	MF 1000PF J		
C27			CK45FF1H103Z	CERAMIC 0.010UF Z		
C28			CE04KW1H470M	ELECTRO 47UF 50WV		J
C28			CE04LW1H470M	ELECTRO 47UF 50WV		S
C29			CE04KW1H010M	ELECTRO 1.0UF 50WV		J
C29			CE04LW1H010M	ELECTRO 1.0UF 50WV		S
C30			CK45FF1H103Z	CERAMIC 0.010UF Z		
C31			CE04KW1C220M	ELECTRO 22UF 16WV		J
C31			CE04LW1C220M	ELECTRO 22UF 16WV		S
C32 ,33			CK45FF1H103Z	CERAMIC 0.010UF Z		
C35 ,36			CK45FF1H103Z	CERAMIC 0.010UF Z		
C37			CE04KW0J471M	ELECTRO 470UF 6.3WV		J
C37			CE04LW0J471M	ELECTRO 470UF 6.3WV		S
C50 -54			CK45FF1H103Z	CERAMIC 0.010UF Z		
C55 ,56			CE04KW1E470M	ELECTRO 47UF 25WV		J
C55 ,56			CE04LW1E470M	ELECTRO 47UF 25WV		S
C100			CK45FB1H471K	CERAMIC 470PF K	MX	
C101			CF92FV1H104J	MF 0.10UF J	MX	
C102			CK45FB1H471K	CERAMIC 470PF K	MX	
C103			CE04KW1V4R7M	ELECTRO 4.7UF 35WV	MX	J
C103			CE04LW1V4R7M	ELECTRO 4.7UF 35WV	MX	S
C104			CE04KW1H010M	ELECTRO 1.0UF 50WV	MX	J
C104			CE04LW1H010M	ELECTRO 1.0UF 50WV	MX	S
C105			CF92FV1H104J	MF 0.10UF J	MX	
C106			CF92FV1H182J	MF 1800PF J	MX	
C107			CE04KW1H010M	ELECTRO 1.0UF 50WV	MX	J
C107			CE04LW1H010M	ELECTRO 1.0UF 50WV	MX	S
C108			CF92FV1H513J	MF 0.051UF J	MX	
C109			CF92FV1H272J	MF 2700PF J	MX	
C110			CF92FV1H182J	MF 1800PF J	MX	
C111			CF92FV1H393J	MF 0.039UF J	MX	
C112			CE04KW1V4R7M	ELECTRO 4.7UF 35WV	MX	J
C112			CE04LW1V4R7M	ELECTRO 4.7UF 35WV	MX	S
C113			CK45FF1H103Z	CERAMIC 0.010UF Z	MX	
C114			CE04KW1E470M	ELECTRO 47UF 25WV	MX	J
C114			CE04LW1E470M	ELECTRO 47UF 25WV	MX	S
C115			CK45FF1H103Z	CERAMIC 0.010UF Z	MX	
C116			CE04KW1E470M	ELECTRO 47UF 25WV	MX	J
C116			CE04LW1E470M	ELECTRO 47UF 25WV	MX	S
C117,118			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C117,118			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C121			CF92FV1H104J	MF 0.10UF J		
C122			CF92FV1H272J	MF 2700PF J	MX	
C151,152			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C151,152			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C157,158			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C157,158			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C165,166			CC45FSL1H151J	CERAMIC 150PF J		
C167			CE04KW1E470M	ELECTRO 47UF 25WV		J
C167			CE04LW1E470M	ELECTRO 47UF 25WV		S

L:Scandinavia **K:**USA **P:**Canada
Y:PX(Far East, Hawaii) **T:**England **E:**Europe
Y:AAFES(Europe) **X:**Australia **M:**Other Areas

J:JAPAN MADE
S:SINGAPORE MADE

⚠ indicates safety critical components.

GE-970

PARTS LIST

× New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

No.9

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C170			CE04KW1E470M	ELECTRO 47UF 25WV		J
C170			CE04LW1E470M	ELECTRO 47UF 25WV		S
C171-174			CC45FSL1H221J	CERAMIC 220PF J		
J1			E11-0206-05	PHONE JACK MIC	MX	
L1 ,2			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
X1			L78-0602-05	RESONATOR (6.3MHZ)		
X2			L78-0290-05	RESONATOR (8MHZ)		
CP1			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP2			R90-0820-05	MULTI-COMP 47K X12		
CP3			R90-0487-05	MULTI-COMP 47KX4 J 1/6W		
R11			RD14NB2E470J	RD 47 J 1/4W		
R13			RD14NB2E470J	RD 47 J 1/4W		
R17			RD14NB2E470J	RD 47 J 1/4W		
R24 ,25			RS14KB3D222J	FL-PROOF RS 2.2K J 2W		
R74 ,75			RD14NB2E470J	RD 47 J 1/4W		
R119,120			RS14KB3A680J	FL-PROOF RS 68 J 1W		
R122,123			RS14KB3D222J	FL-PROOF RS 2.2K J 2W		
R124			RD14NB2E150J	RD 15 J 1/4W		
R162,163			RD14NB2E470J	RD 47 J 1/4W		
R164,165			RS14KB3D560J	FL-PROOF RS 56 J 2W		
R166,167			RD14NB2E470J	RD 47 J 1/4W	MX	
R173-176			RS14KB3D222J	FL-PROOF RS 2.2K J 2W		
VR1		*	R05-3039-05	POTENTIOMETER(10K) MIC VOL	MX	
S2 -13			S40-1064-05	PUSH SWITCH	TE	
S2 -31			S40-1064-05	PUSH SWITCH	MX	
S15 -31			S40-1064-05	PUSH SWITCH	TE	
S1			T99-0530-05	ROTARY ENCODER MULTI CONTROL		
D1 ,2			HZS6.2N(B2)	ZENER DIODE		
D1 ,2			RD6.2ES(B2)	ZENER DIODE		
D4 -27			HSS104A	DIODE		
D4 -27			1SS131	DIODE		
D28			HZS5.1N(B2)	ZENER DIODE		
D28			RD5.1ES(B2)	ZENER DIODE		
D29 -31			HSS104A	DIODE	MX	
D29 -31			1SS131	DIODE	MX	
D30			HSS104A	DIODE	TE	
D30			1SS131	DIODE	TE	
D32			HSS104A	DIODE	TE	
D32			1SS131	DIODE	TE	
D33			HZS5.1N(B2)	ZENER DIODE		
D33			RD5.1ES(B2)	ZENER DIODE		
ED1		*	FIP21EMW24	INDICATOR TUBE		
IC1		*	M38173M6-163FP	IC(8BIT MICROPROCESSOR)		
IC2		*	BR24C02	IC(256X8BIT SERIAL EEPROM)		
IC3		*	M37470M8-200SP	IC(8 bit MICROPROCESSOR)		
IC4 ,5			SN755703FT	IC(DISPLAY DRIVER)		
IC6			MN1381-R(TA)	IC(VOLTAGE DETECT)		
IC6			S-80740AL	IC(VOLTAGE DETECTOR)		
IC7			XR-1091ECP	IC(GE FILTER)		
IC8			TC4051BP	IC(8CH MPX/ DE-MPX)		
IC9			XR-1091ECP	IC(GE FILTER)		
IC10-12		*	TD62781AF	IC(FL,LED DRIVER)		

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M:Other Areas

J:JAPAN MADE
S:SINGAPORE MADE
⚠ indicates safety critical components

× New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

No.10

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
IC13,14			NJM4565D-D	IC(OP AMP X2)	MX	
IC16,17			NJM4565L-D	IC(OP AMP X2)		
IC18			MC74HCU04N	IC(INVERTER)		
IC18			TC74HCU04AP	IC(CMOS INVERTER)		
Q1			2SC1740S(Q,R)	TRANSISTOR		S
Q1			2SC2458(Y,GR)	TRANSISTOR		
Q1			2SC2785(F,E)	TRANSISTOR		S
Q1			2SC3311A(Q,R)	TRANSISTOR		
Q2			2SA1534A(R,S)	TRANSISTOR		
Q3			2SC3940A(R,S)	TRANSISTOR		
Q4 ,5			2SC2631(R,S)	TRANSISTOR		
Q6			2SC1740S(Q,R)	TRANSISTOR		S
Q6			2SC2458(Y,GR)	TRANSISTOR		
Q6			2SC2785(F,E)	TRANSISTOR		S
Q6			2SC3311A(Q,R)	TRANSISTOR		
Q7			2SA1048(Y,GR)	TRANSISTOR		
Q7			2SA1175(F,E)	TRANSISTOR		S
Q7			2SA1309A(Q,R)	TRANSISTOR		
Q7			2SA933S(Q,R)	TRANSISTOR		S
Q8 ,9			2SC1740S(Q,R)	TRANSISTOR		S
Q8 ,9			2SC2458(Y,GR)	TRANSISTOR		
Q8 ,9			2SC2785(F,E)	TRANSISTOR		S
Q8 ,9			2SC3311A(Q,R)	TRANSISTOR		

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M:Other Areas

J:JAPAN MADE
S:SINGAPORE MADE
⚠ indicates safety critical components

SPECIFICATIONS

[Performance]

Equalizer characteristic variable range	± 12 dB
Center frequencies (Hz)	40, 63, 98, 160, 250, 400, 625, 1k, 1.5k, 2.5k, 3.9k, 6.3k, 10k, 16k
Frequency response	10 Hz ~ 70 kHz, ± 3 dB
Total harmonic distortion (at 1 kHz, flat)	0.006%
Gain	0 dB
Signal to noise ratio (IHF '66)	100 dB
Input impedance	47 k Ω
Output impedance	2.2 k Ω

[General]

Power consumption	30 W
AC outlet	
For Australia	
UNSWITCHED	1 (100 W max.)
For other countries	
UNSWITCHED	2 (100 W max.)
Dimensions	W: 360 mm H : 120 mm D : 357 mm
Weight (Net)	4.2 kg

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

GE-970

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the General Market (M) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

KENWOOD CORPORATION
Alive Mitake,2-5,1-chome Shibuya,Shibuya-ku, Tokyo 150, JAPAN
KENWOOD U.S.A. CORPORATION
CONSUMER ELECTRONICS GROUP
P.O. BOX 22745, 2201 East Dominguez St., Long Beach, CA 90810, U.S.A.
KENWOOD ELECTRONICS CANADA INC.
6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8
KENWOOD ELECTRONICS LATIN AMERICA S.A.
P.O. BOX 55-2791, Piso 6 Plaza Chase, Cl. 47 y Aquilino de la Guardia, Panama,
Republic de Panama
TRIO-KENWOOD U.K. LIMITED
Kenwood House, Dwight Road, Watford, Herts, WD1 8EB, United Kingdom
KENWOOD ELECTRONICS BENELUX N.V.
Mechelsesteenweg 418 B-1930 Zaventem, Belgium
KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Rembrücker Str. 15,63150 Heusenstamm, Germany
TRIO-KENWOOD FRANCE S.A.
13 Boulevard Ney, 75018 Paris, France
KENWOOD LINEAR S.p.A.
20125, Milano-Via Arbe, 50, Italy
KENWOOD ESPAÑA S.A.
Bolivia, 239-08020 Barcelona, Spain
KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (A.C.N. 001 499 074)
P.O. BOX 504, 8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia
KENWOOD & LEE ELECTRONICS, LTD.
Unit 3712-3724, Level 37 Tower 1, Metroplaza, 223 Hing Fong Road,
Kwai Fong N.T. Hong Kong
KENWOOD ELECTRONICS SINGAPORE PTE LTD
No. 1 Genting Lane #07-00, Singapore, 1334